

Cybersecurity Czar Demands Vendor Accountability Page 76

JUNE 15, 2002 • \$9.00

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RICHARD CLARKE, chairman of the Critical Infrastructure Protection Board



The Magazine for Information Exec

YOU CAN'T OUTSOURCE CITY HALL

Why City and State Deals Always Fail

Page 66

CIOs Prescribe
CRM for
Health Care's Woes

Page 88

JAMES WADE, chief security officer of the Federal Reserve System: "It's difficult for IT people to appreciate the risks involved" in B2B relationships. He does.

SPECIAL B2B REPORT

YOUR PARTNERS ARE PUTTING YOU

AT RISK

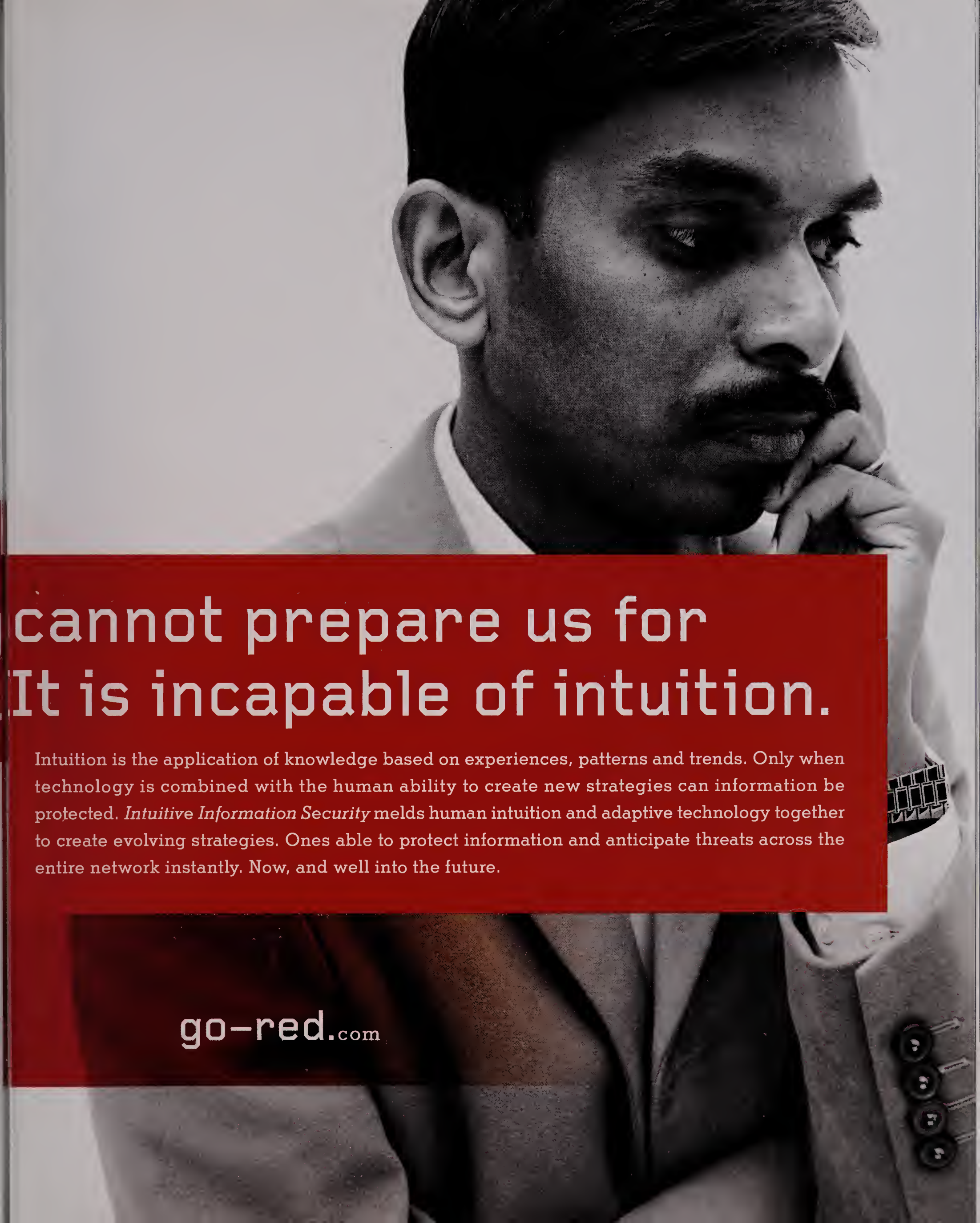
How to Practice Safer B2B

PLUS Tips to Recruit More Partners for Maximum Profits Page 52



If left alone, technology will do what it was originally designed to do. Nothing more and nothing less. Forever. But, in reality, every single moment of every single day is as different as the last.

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VOL. 15 • NO. 17 • JUNE 15, 2002

Cover Story

B2B PARTNERSHIPS

SECURITY | 52

How to Practice Safe B2B

Before swapping information with multiple e-commerce partners, it pays to protect yourself by pushing partners to adopt better security practices. *By Eric Berkman*

RECRUITMENT | 60

How to Grow Your B2B Network

Forget the 80/20 rule, and stop wasting money. You need to get the rest of your trading partners online to reap a real return from e-commerce. *By Meridith Levinson*

COVER PHOTO BY KATHERINE LAMBERT



James Wade, chief security officer for the Federal Reserve System: "If security is buried in the technical bowels of the organization, it's probably not having significant influence on senior management."

Features

GOVERNMENT OUTSOURCING

You Can't Outsource City Hall | 66

The state and local government outsourcing marketplace was supposed to explode, but we're still waiting to see a spark. It's time to devise a new plan to revitalize public sector IT.

By Tom Field



"We don't want to regulate. We'd like voluntary cooperation because it works better if people think they're doing it in their own best interest," says Richard Clarke, President Bush's top cybersecurity adviser. For more on his mission, see Page 76.

SECURITY Q&A

They Want *You* for a Safer Infrastructure | 76

Richard Clarke and Howard Schmidt are coordinating a volunteer effort to try to protect the nation's critical infrastructure. Can they convince corporate America to play along? *By Sarah D. Scalet*

CRM

CIOs at the Heart of Health-Care Change | 88

For good or ill, CIOs are reshaping the way health care is delivered in America. *By Scott Berinato*

BOOK EXCERPT | LEADERSHIP

Managing People Politics | 96

Line up partners, position your enemies, and control those on the fence—six lessons in being a leader. *By Ronald A. Heifetz and Marty Linsky*

MORE ►►►

And now, a few words about data back up:

For the tech crowd:

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THE POSSIBILITIES ARE INFINITE

Columns

NET GAINS

Profit from Transparency | 42

Should your customers compare prices, post opinions and pit you against your competitors? Absolutely.

By Mohanbir Sawhney

PEER TO PEER

Step Up and Lead | 48

Today the CIO role can be as big as you want it to be. *By John J. Ciulla*

Sections

TRENDLINES | 24

IT saves school in Brooklyn; Survey says: Deliver ROI; Dr. E-mail; FBI seeks new CIO. *And more*

OFF THE SHELF | 32

First Among Equals and *Small Pieces Loosely Joined*; The New Book Shelf; CIO Best-Sellers

WASHINGTON WATCH | 38

Doom for the NIPC?

HOTSEAT | 132

Your Guide to Managing

Yes, We Had No Integration

Like the cobbler's children who had no shoes, CMGI was an IT company that lacked IT basics. Until CIO Jo Hoppe arrived. *By Edward Prewitt*

Management Briefs | 136

Using bonuses for business alignment.

Leadership Agenda | 138

IT Parenting: How to make no sound like yes—and raise good IT citizens in the process. *By Susan H. Cramm*

EMERGING TECHNOLOGY | 120

New tools give legacy apps a better life on the Web. *By John Edwards*

COOL PRODUCT | 124

X-Top multiple monitor systems provide more digital real estate.

UNDER DEVELOPMENT | 126

Can IT help protect the public from bioterrorism?

COMPANIES TO WATCH | 128

TeaLeaf's tools show you what your Web visitors really experience.

PUNDITS | 130

The latest optimization tools can help you get every dollar out of your operations.



Not only did CIO Jo Hoppe have to build and integrate systems for CMGI's 21 companies, but she had to do it at "CMGI speed," which was ASAP.

In Every Issue

FROM THE EDITOR

Powers of Persuasion | 16

Optimism can't make B2B networks succeed. It takes hard work—by you.

By Abbie Lundberg

INBOX | 18

Reader feedback

INDEX | 145

EXECUTIVE SUMMARY | 146

Abstracts of all the feature stories found in this issue.

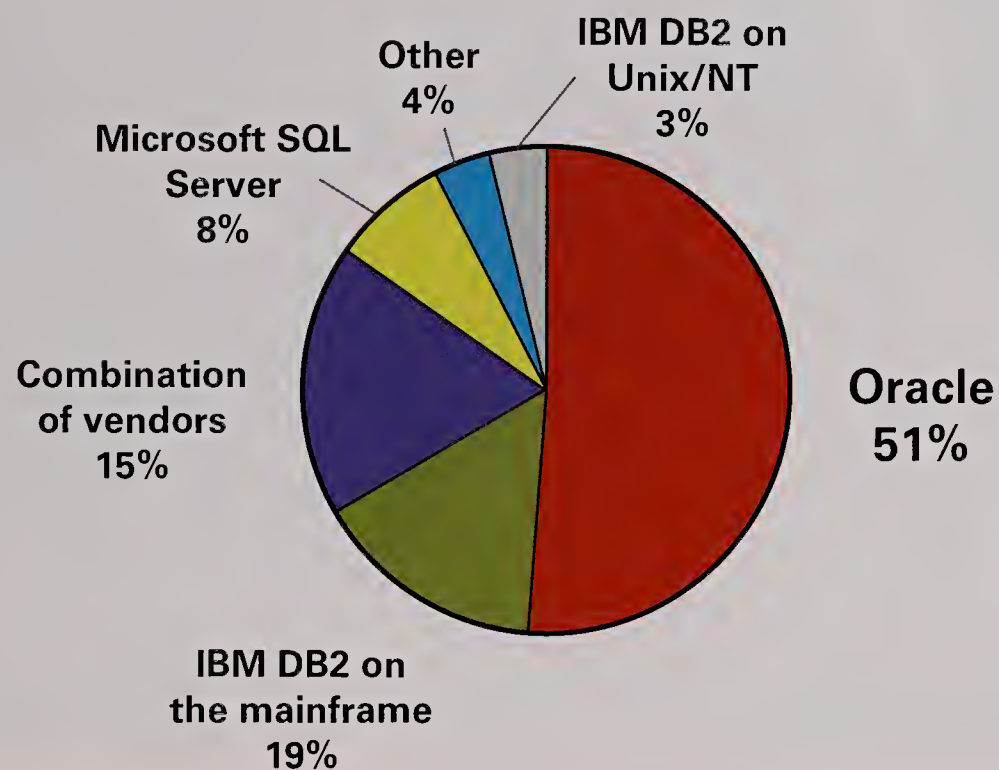


"It's hard to believe this is the same job I had nearly 10 years ago. Today I'm all over our company and all over the country. Back then, I was in the basement."

—John Ciulla, CIO at Vignette, on the new CIO role Page 48

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WEB >connections

WEIGH IN

Will CRM-generated health plans lead to rationing?

In **CIOs at the Heart of Health-Care Change** (Page 88), Senior Writer Scott Berinato reports that CRM is being used to try to fix the broken health-care system.



But some in the medical community fear the use of technology will only lead to patient discrimination. What do you think? Is technology the good guy or the bad guy here?

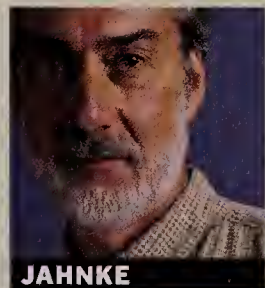
David Goltz, CFO and interim CIO of Destiny Health

Find links to these stories in the Web Connections box at www.cio.com.

Our Daily Web

MONDAY Tech Tact Technology Editor Christopher Lindquist covers what's coming.

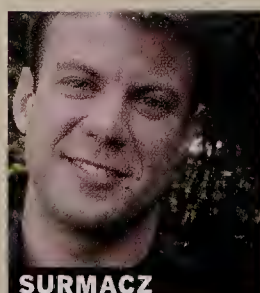
TUESDAY Quick Poll Read what CIOs think about current IT issues.



WEDNESDAY Metrics Web Writer Jon Surmacz makes sense of the numbers.

THURSDAY Sound Off Web Editorial Director Art Jahnke opines on ethical dilemmas.

FRIDAY The Big Picture Charts and graphs worth 1,000 words.



TALK BACK

Is large-scale outsourcing unworkable in the public sector?

From California to Connecticut, state and local governments have tried to go the outsourcing route (**You Can't Outsource City Hall**, Page 66). But it hasn't worked. Are such projects doomed to failure? Tell us what you think.

ASK THE AUTHOR

Test your political savvy

Do you know how to convince your opponents and sway the undecided? Ronald Heifetz and Marty Linsky (**Managing People Politics**, Page 96), authors of the new book *Leadership on the Line*, will field your questions for the next two weeks.

CIO READER POLL

Are you ready for transparency?

Mohanbir Sawhney says in his **Net Gains** (Page 42) column that companies need to move the conversation with customers from price to value by going open kimono. Are you ready?

Peer Resources

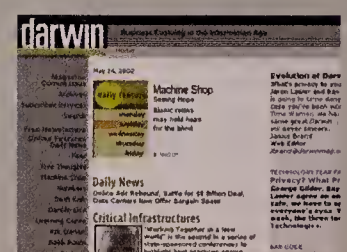
E-mail your nontechnology colleagues the following stories from CIO's online sister publication, Darwinmag.com.

CIO's **How to Practice Safe B2B** (Page 52) outlines ways to keep you and your exchange partners secure. Darwinmag's **Executive Guide to B2B** goes through the basics.

Do your peers' eyes glaze over when API, TCP/IP and VPN trip off your tongue? Send them to Darwinmag's

Glossary.

Find these articles on www.darwinmag.com or go to www.cio.com/printlinks.





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From the Editor

lundberg@cio.com



You'll find a wealth of information on B2B e-commerce at www.cio.com/research/ec/b2b.html.

Powers of Persuasion

MOST PEOPLE, DEEP DOWN, have a solid streak of optimism that drives them to feel hopeful about the future. It's what gets us up in the morning, even when life turns uncertain or scary or grim. It paints our reality in colors and shapes more pleasing than what's actually before us. If you don't believe me, go house-hunting with a friend and listen to her describe not the dark cabinets in the ill-lit kitchen of today but the bright, airy family center of her dreams.

That optimism fosters imagination, a uniquely human trait. Imagination drives our creativity, our ambition and our urge to build things, whether houses, companies or information systems.

What's usually missing from the exciting images we construct in our heads are all the details of what we'll need to do in order to execute our dream. Sure, we know we'll have to work hard, and it will take time and money, but we simply can't entertain all the minute details and daily tasks we must tackle before we realize our goal. Even if our mind could conceive and contain it, our optimism would smooth the edges and veil the realities in mist—or we'd never begin.

That, I imagine, is how many of today's B2B efforts began. Manufacturers and retailers had a

vision of the way things could be if goods and payments and the associated information could move effortlessly between them and their trading partners—and it was good. When the technology to make that happen came along, people started building with a vengeance.

Two things happened along the way. B2B champions realized that many of their partners didn't exactly share their enthusiasm for the new way of doing things. And of those who did, few understood their role in creating and maintaining a secure setting for that activity.

So while a lot of the infrastructure for low-cost, seamless online trading exists today, much of the hard work remains to be done. It's not technical work. It's not even contract work. It's exerting your influence and powers of persuasion over the people and companies you do business with. It's change management and relationship building. It's about setting expectations and monitoring compliance. It's getting on the phone and meeting face-to-face.

And it's the focus of our special report on making B2B relationships work, beginning on Page 52. Because optimism and imagination will only take you so far.

Allie Lundberg

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Reader Feedback

IT'S ABOUT THE PEOPLE

In *Total Leadership* ["Built to Last," April 1, 2002], Patricia Wallington addresses management of the IT function with some very pragmatic advice. Much like business plans, strategies with lots of good words look great on paper and stack nicely on the shelf in neatly bound binders. However, at the end of the day there have to be real people executing the plans if they are to be achieved. Reports and plans are great, but results are better.

Rubin Dubiansky • *Rubin Dubiansky and Associates* • Toronto • rubin.d@rogers.com

MISSED OPPORTUNITY

The economy continues in low gear with glimmers of a rebound. We are at a significant inflection point for the economy and IT. And it won't be business as usual when things finally stabilize. When the new economy emerges, it will be replete with new IT management challenges. Layoffs continue in abundance for some sectors, and hiring remains low for all sectors. Sitting on the sidelines today is the greatest abundance of highly skilled senior and middle IT managers that we have ever seen. Companies are missing out on a great opportunity to tap a tremendous resource of IT expertise and experience that they desperately need yet are slow to realize. The company you save now through targeted hiring might be your own.

William J. Reid
Executive Adviser
Castle Rock Group
Castle Rock, Colo.
castlerockgroup@hotmail.com

TEACHING ERP

I have been part of the ERP implementation industry for 10 years and have been personally involved in at least eight large implementations during this period.

I am not here to defend the ERP training industry in general; many customer organizations just do not get their ERP implementation fundamentals in place, and training is just a small part of it.

I have been teaching computer and management subjects for a long time, and I learned the following from my experience as a teacher. Training and education are two different things; training is hands-on while education aims to build an understanding of the fundamentals. ERP is a paradigm shift in everything that the organization does, and if the training is going to start by telling what a screen means, disaster is guaranteed. There is a huge gap between top-management perceptions and operating management's understanding of why ERP is implemented. Top management, rightly, thinks that this is the way future businesses will work. The middle layer required for translating the vision into concrete, measurable activities simply doesn't exist in many cases.

Buck Kulkarni
President
Genesys
White Plains, N.Y.
buck.kulkarni@igenesys.com



THE TRUE CXO

Regarding roles within the strategic planning process ["How to Succeed in Strategic Planning," Hot Seat, March 15, 2002], my roles vary in

that I work for and with multiple organizations. In one position I am acting chief knowledge officer (CKO), CIO and CTO, and I have a few subordinate positions and roles to fulfill.

As a corporate officer, I am charged with assisting the other corporate officers to exploit the intellectual and IT assets for the benefit of shareholders. In that role, I advise the CEO, COO and CFO as to what is feasible with current and future assets. Second, as the leading technology officer, I look for ways to exploit technology as part of business strategy. Third, as the CKO, I am charged with the design and execution of our strategic planning process as well as our strategy deployment process.

Lastly, as the CIO, I am charged with planning and managing the infrastructure and technology investments the corporation makes. In that position I also fulfill the role of chief architect for the corporation's infrastructure and IT.

Brian K. Seitz
CKO
Realtime Communications
bseitz@rtcent.com

WHAT DO YOU THINK?

Send your thoughts and feedback to letters@cio.com. Letters may be edited for length or clarity.



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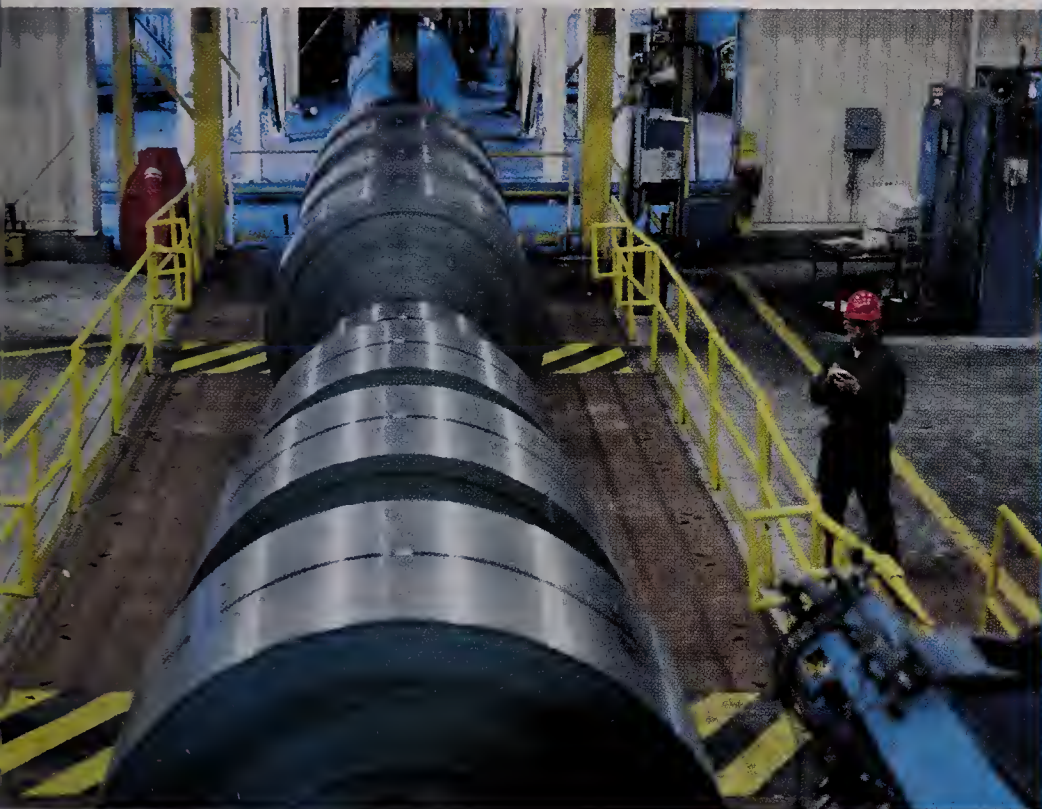
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Edited by Lafe Low

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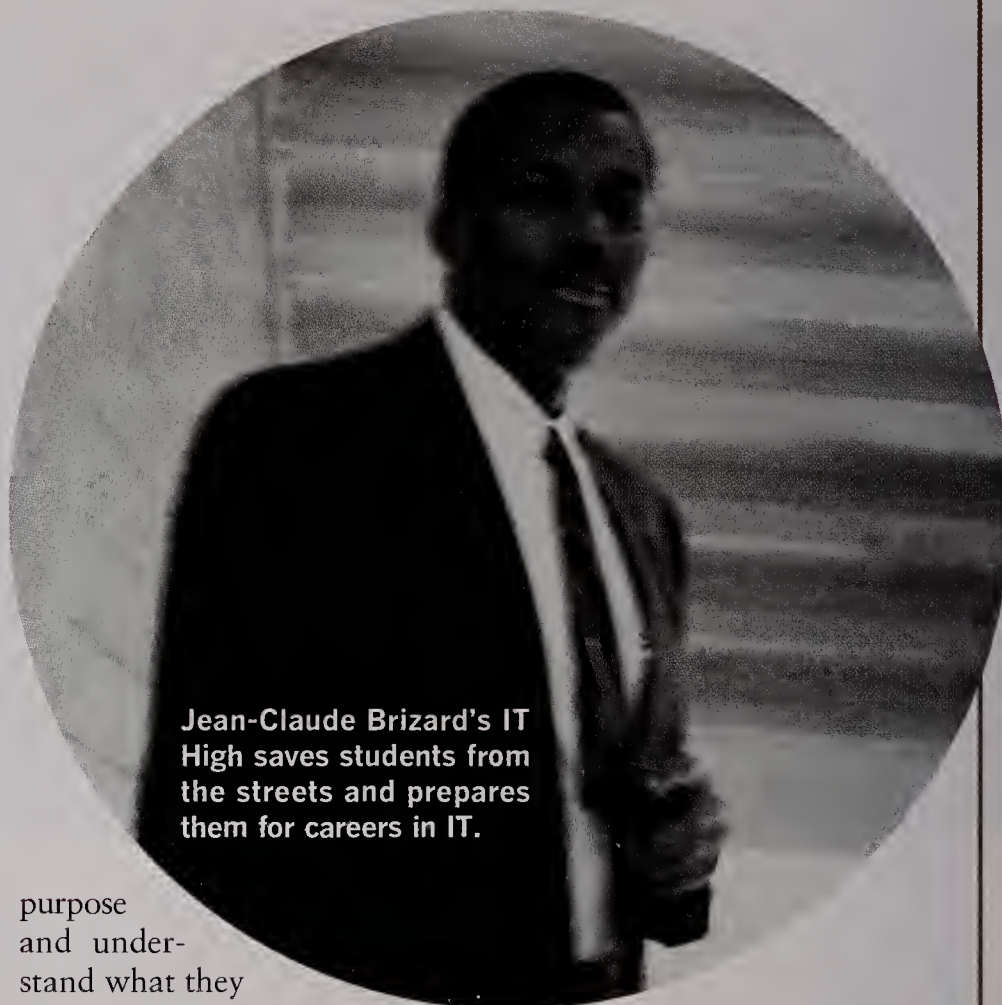
IT Saves School

By Eric Berkman

IN THE FALL OF 2000, George Westinghouse High School in Brooklyn, N.Y., a drug-and-violence-ridden urban school, re-invented itself as "IT High" (see "A School Grows in Brooklyn," at www.cio.com/printlinks). Now, more than a year later, CIO can happily report that this transformation has saved a school and helped prepare the next generation of IT leaders.

Under the guidance of Principal Jean-Claude Brizard—and with corporate support from the Securities Industry Automation Corp.—Westinghouse is finishing its second year of preparing economically underprivileged students for college study and careers in IT. The results are already showing. Since the program's inception, there have been double-digit improvements in English, math and history test scores. Suspensions have dropped 300 percent from three years ago. The new emphasis on IT is clearly helping students, although it's too early to judge the school's success as an IT training ground. The first class to go through the whole three-year program, which culminates in A+, MCSE, CIW, AutoCADD or Cisco certification as well as a high school diploma, won't graduate until 2003.

Brizard reports that last year's seniors are doing well. "It's amazing," he says. "About 80 percent of the students have gone on to college. And we've seen happier students...who really have a



Jean-Claude Brizard's IT High saves students from the streets and prepares them for careers in IT.

purpose and understand what they wish to accomplish."

Graduates have secured IT positions with organizations such as AOL Time Warner, the New York City transit system and the New York City Board of Education.

The program has generated significant buzz in the education world. School boards from Buffalo and Baltimore have visited, looking to

Westinghouse as a model for IT high schools in their own city. The Information Technology Association of America invited Brizard to give a presentation at its conference in Virginia, and a number of private corporations and financial institutions have expressed interest in providing internships for Westinghouse students. Still, Brizard is most proud of the impact the school's transformation has had on the students. "They now feel in control of their future and destiny," he says.

Department of **BIG,** Scary Numbers

25% of business travelers have reduced air travel. **30%** said personal safety concerns or family members' concerns were the main reason for not traveling. **70%** of business travelers expect their personal safety concerns will lessen in the next year. **21%** said they will never feel comfortable about their loved ones flying. **33%** of those travelers who have reduced their schedules have used audio, video or Web conferencing as a substitute. **62%** said they plan to use conferencing more next year.

SOURCE: "MEETINGS IN AMERICA IV: THE NEW ROAD WARRIOR,"
BY TAYLOR NELSON SOFRES, INTERSEARCH



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C I O R O L E

Survey Says: Deliver ROI

By Lorraine Cosgrove Ware

THE FORWARD-LOOKING, visionary CIO may be out of style for the moment. A visionary CIO is one who asks where the business is going and envisions how to apply technology three to five years out, according to John J. Davis, president of New York City-based executive search firm John J. Davis & Associates. "This presupposes that the business is looking ahead three to five years, which may not be the case right now." In fact, the CIO most likely to get hired now is pragmatic, diagnostic and has a proven track record of delivering on time and on budget.

A recent survey of 138 business executives conducted by Darwinmag.com, an online sister publication to *CIO*, found that while businesses still expect IT to help them stay ahead of the competition, they also rely on IT to improve the bottom line. Darwinmag.com panelists indicated the top goals for IT in the coming year are to increase competitive advantage, reduce cost and improve efficiency, in that order. Executives listed more externally focused goals for the previous

year, including empowering employees with access to information and improving customer service. When asked how executives determine whether IT is delivering value, the panelists in the December and January polls consistently listed reduced cost and improved productivity.

"A few years ago, CIOs were guiding organizations into the future. Now the

focus is on return for shareholders and improving business processes today, not 12 months down the road," he says. Still, the visionary CIO will be back in vogue one day, according to Davis. "CIOs have to have both visionary skills and delivery skills. The visionary skills are just not being called upon strongly right now," he says.

Greater Expectations

	What were the top three goals or expectations from IT during the past year?	What are the top three goals or expectations from IT for the next year?
Empower employees with access to information	50%	28%
Create/increase competitive advantage	43%	46%
Improve customer service	43%	37%
Reduce cost of doing business	41%	43%
Improve efficiency	41%	41%
Improve employee productivity	35%	35%
Empower customers with access to information	26%	31%
Generate more revenue	21%	34%
Other	4%	6%

SOURCE: DARWINMAG.COM, AN ONLINE SISTER PUBLICATION TO *CIO*, JANUARY 2002. FOR THE LATEST POLL, VISIT WWW2.DARWINMAG.COM/LEARN/RESEARCH.

E - B U S I N E S S S T R A T E G I E S

The Doctor Is In—Always

By Megan Santosus

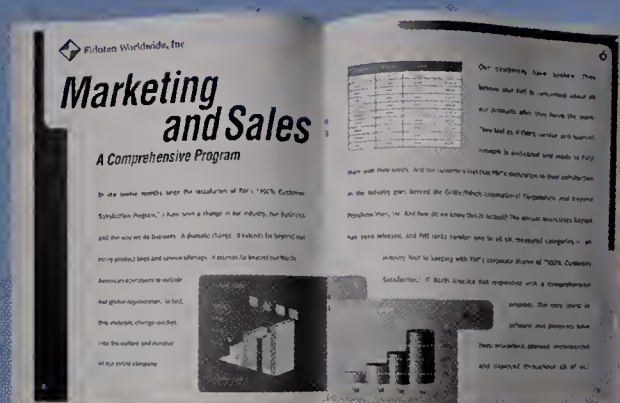
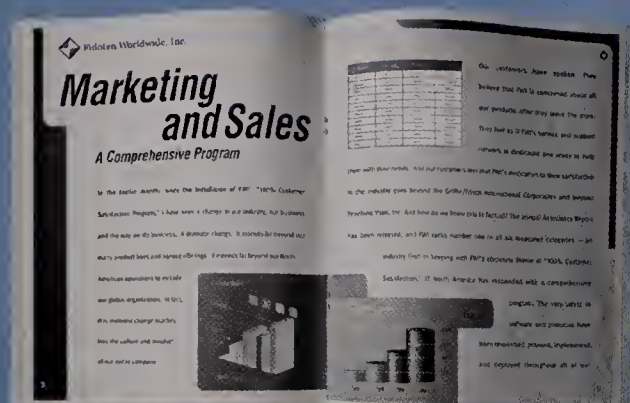
ENDLESS PHONE TAG, after-hours messages left with an answering service, disjointed conversations—there must be a better way for patients to correspond with their doctors.

Well, there is, at least as far as the patients are concerned: e-mail. Ninety percent of doctors use it, according to a 2001 national survey of physicians con-

ducted by Medem, a San Francisco-based provider of online communications and services for the medical industry. The problem is that only 10 percent of those physicians use e-mail for corresponding with patients.

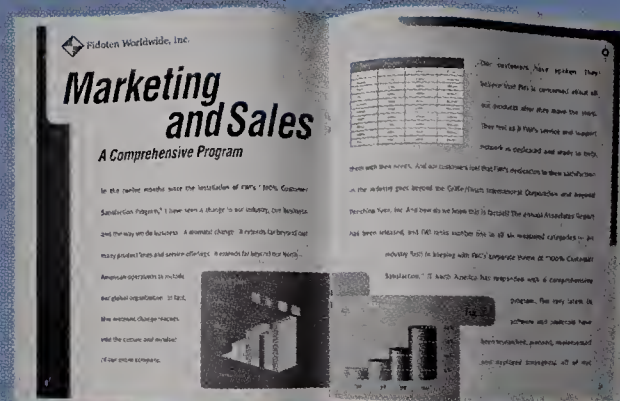
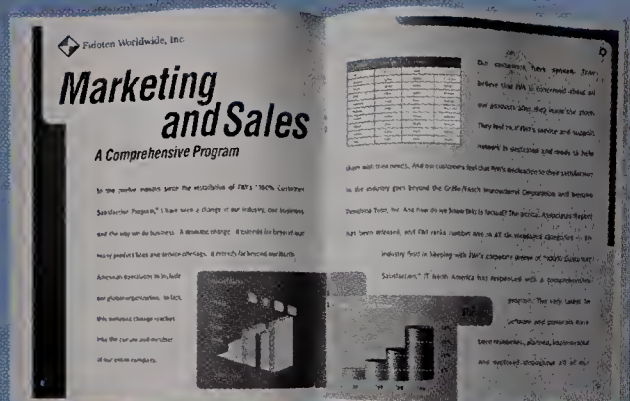
Continued on Page 28





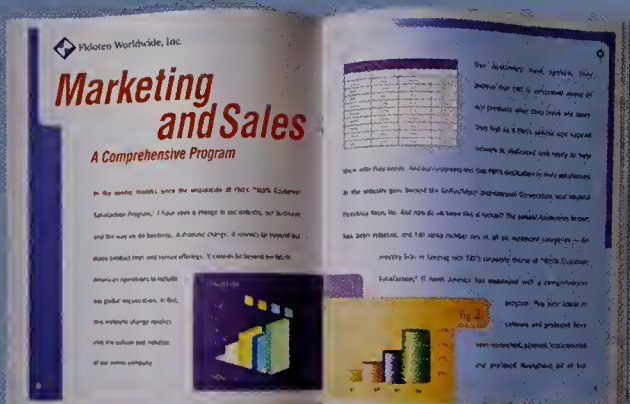
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The Doctor Is In

Continued from Page 26

Ed Fotsch, Medem's CEO (who is an MD), says that resistance comes from doctors' preoccupation with "love, loot and limited liability." E-mail has yet to enhance the doctor-patient relationship (love), it can lead to more work without reimbursement (loot), and insurance carriers have not adequately addressed issues of security, privacy and coverage (limited liability).

By providing secure communications networks with provisions for authentication and encryption, Medem and other companies such as Healinx and Requesthealth.com hope to usher in a new age of doctor-patient electronic communication. Besides free services such as prescription refills, referrals and appointment requests, secure network providers could facilitate online consultations and second-opinion services for which patients or their insurers would pay. According to the results of Medem's survey and other similar studies, 30 percent of patients are willing to pay an online consultation fee of \$20 to \$30 per e-mail consultation. Since patients avoid taking time off from work and paying for gas and parking, "that price, even if it's entirely out of pocket, is a bargain," says Fotsch.

Pediatrician Eugenia Marcus of Newton, Mass., receives six to 10 e-mails from patients each day. "It's a huge benefit to me because I can handle so many more questions in the same amount of time," she says. At the moment, Marcus uses e-mail to answer routine questions. Later this year she'll start using Requesthealth.com's secure network, through which her practice will offer patients access to electronic medical records and fee-for-service consultations. (Marcus serves as a consultant to Requesthealth.com.) Although insurance payments are yet to be settled, Marcus is certain many patients will pay for online consultations themselves. After all, they'd be saving themselves time and money.

feedback

Responses or ideas for Trendlines?
E-mail Features Editor Lafe Low at
lflow@cio.com or Executive Editor
Michael Goldberg at mgoldberg@cio.com.

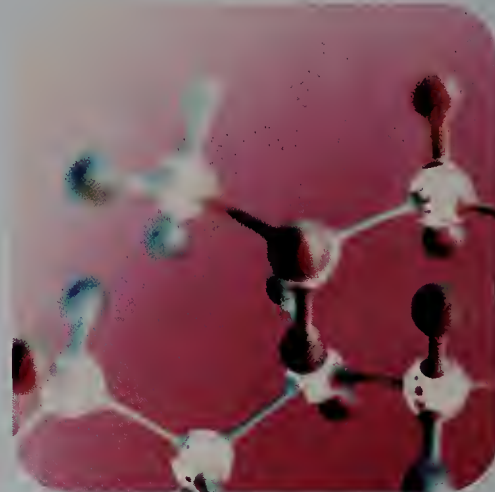
D I S T R I B U T E D C O M P U T I N G

United We Crunch

By Lafe Low

EXAMINING MORE than 3 billion molecules to determine which ones might treat a particular disease sounds like a lifetime's work, but the Anthrax Research Project (ARP) wrapped up just such a massive screening in 24 days. Of the nearly 3.6 billion molecules analyzed, the project identified more than 376,000 as candidates for treating the anthrax virus, which would render it ineffective as a weapon.

The ARP functions in a similar fashion to the Mountain View, Calif.-based nonprofit Search for Extraterrestrial Intelligence (SETI) project, which recruits individual computer users to share their unused processing power to help analyze radio signals. Users download a program that kicks in as a screen saver and crunches numbers to contribute to signal analysis for signs of extraterrestrial activity. With funding from Intel and Microsoft, ARP similarly tapped into unused computing power in the user community of Austin, Texas-based United Devices. Users downloaded a screen saver that used the computers' spare processing power to crunch numbers. The network of volunteers essentially created a massive supercomputer. Once each packet of data had been



The massive computing power of Anthrax Research Project helped analyze nearly 3.6 billion molecules in just 24 days.

analyzed, the program returned the results to United Devices' data center and retrieved a new packet of data for processing.

"Had we done this using traditional methods, it would have taken years instead of less than four weeks," says Graham Richards, chairman of the Oxford University Chemistry Department and director of the National Foundation for Cancer Research Center for Computational Drug Design. Oxford University researchers presented the findings to government officials at a ceremony in Washington, D.C., last March. The Anthrax Research Project wrapped up the screening phase in 24 days, finishing on Valentine's Day.

DURING THE ANTHRAX RESEARCH CRUNCH:

- > **5,436** compute years were consumed (47,621,948 hours).
- > If joined, the computers involved could process **60 trillion** floating point operations (60 teraflops) every second.
- > If the world's **20** fastest supercomputers had been combined for this task, processing would have taken nearly **twice** as long.

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Off the Shelf

Edited by Carol Zarrow

Leading Teams

First Among Equals: How to Manage a Group of Professionals

By Patrick J. McKenna and David H. Maister
The Free Press, 2002, \$26

CIOs who oversee flat organizations—which is to say, a lot of CIOs today—would do well to give this book to IT workers whom they've designated “team leaders.” That common title and its synonyms confer responsibility without granting corresponding authority, making it a difficult position at best. That said, McKenna and Maister—a consultant for and expert on professional service firms, respectively—quickly make the case for the great importance of good leadership to the functioning

of teams. The rest of the book is a thorough how-to on being a good team leader. With checklists and useful examples, the authors show how to lay the groundwork for leading one's peers, how to work with individuals and groups alike, and how to measure success. *First Among Equals* covers special situations, such as dealing with under-achievers and prima donnas, and integrating new team members successfully. But the usefulness of this book lies in its applicability to a challenge that most everyone faces at some point: how to get a team to work well.

—Edward Prewitt



The Examined Web

Small Pieces Loosely Joined: A Unified Theory of the Web

By David Weinberger
Perseus Publishing, 2002, \$25

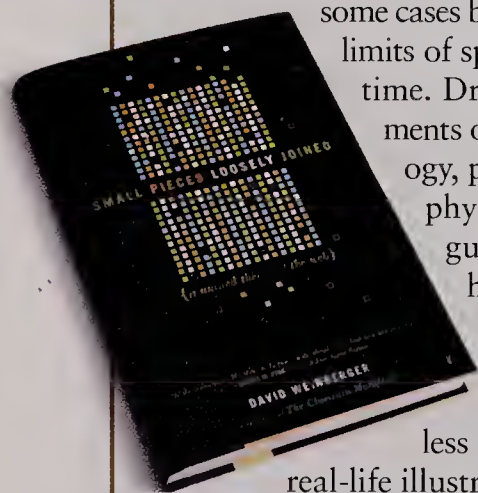
Socrates suggested the unexamined life is not worth living. *Small Pieces Loosely Joined* extends that maxim to include virtual life as well.

Weinberger, coauthor of *The Cluetrain Manifesto*, delves into the inner workings of the World Wide Web—not routers or HTML, but the social construction of the Web and how it functions within (or in some cases beyond) the perceived limits of space, geography and time. Drawing together elements of philosophy, sociology, psychology and even physics, he plays tour guide to the Web, its history and its portrayal in the media.

Weinberger balances some of his less tangible points with real-life illustrations and includes

conversations with and anecdotes from the creators of HTML, the Internet and the Web. He visits the roles of permission and privacy in the new environment and, to some extent, their resulting effects on commerce. Thought-provoking but not supercharged, *Small Pieces Loosely Joined's* epistemological trek over the terrain of the Web is a stimulating enough read but hardly the trove of originality or probing insight it promises.

—Amanda S. Fox



THE NEW BOOK SHELF

“Successful investment in technology requires investment in a host of other intangibles, notably work processes, human capital and workplace organization. Technology alone rarely provides a company with a competitive edge. Technology complemented by investments in intangibles does—or at least it can.”

From *Invisible Advantage: From Innovation to Reputation—How Intangibles Are Driving Business Performance*, by Jonathan Low and Pam Cohen Kalafut (Perseus Publishing, June 2002)

“Information becomes more valuable the more it is used, and if nurtured, generates new value over time, becoming more useful as a source of new products and services. Your supply of invisible capital does not obey the laws of thermodynamics. In the information revolution, strategy is a machine powered by information assets. Strategy is perpetual.”

From *The Strategy Machine: Building Your Business One Idea at a Time*, by Larry Downes (HarperCollins Publishers, June 2002)

CIO Best-Seller List

5 Gung Ho! Turn On the People in Any Organization

By Kenneth H. Blanchard
William Morrow, 1997

4 The HR Scorecard: Linking People, Strategy, and Performance

By Brian E. Becker, Mark A. Huselid and Dave Ulrich
Harvard Business School Press, 2001

3 Creative Destruction: Why Companies That Are Built to Last Underperform the Market—And How to Successfully Transform Them

By Richard Foster and Sarah Kaplan
Doubleday, 2001

2 Now, Discover Your Strengths: The Revolutionary Program That Shows You How to Develop Your Unique Talents and Strengths—And Those of the People You Manage

By Marcus Buckingham and Donald O. Clifton
The Free Press, 2001

1 First, Break All the Rules: What the World's Greatest Managers Do Differently

By Marcus Buckingham and Curt Coffman
Simon & Schuster, 1999

SOURCE: APRIL 2002 DATA,
COMPILED BY AMAZON.COM, SEATTLE

Gateways TO Mission Critical INFORMATION

It is clear that we are all drowning in a sea of information. The challenge is to learn to swim in that sea, rather than drown in it.

- from a study by University of California, Berkeley School of Information Management and Systems

UNFORTUNATELY, when most people dig into their enterprise's data repositories for critical nuggets of information, they find themselves over their heads. They are flooded with too much information, or too little.

For CIOs chartered with helping users to easily find what they are looking for, web-based portals provide a robust solution to this vexing problem. But this answer goes far beyond simply launching a rudimentary intranet that provides users with access to the company's data warehouse.

To obtain real value from their portal initiatives, CIOs must deal with a spectrum of problems—ranging from integrating all aspects of the information life-cycle to coping with what IDC calls “the invisible intranet.”



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Elusive Information

“The invisible intranet” was coined by IDC in a 2001 white paper titled *The High Cost of Not Finding Information*, which explains: “Any information that isn’t centrally indexed will not appear in search results, creating a phenomenon known as the ‘invisible intranet.’ The information is

there, but it simply cannot be found by the intranet’s search function.”

Enterprise information is stored in disparate content repositories and comes in a wide range of formats—usually not the static HTML pages preferred by search engines. Even files generated by Microsoft Word, Excel or PowerPoint are often overlooked. Rich media files almost always defy normal search and classification schemes. And files stored locally on desktops, laptops and even the newer classes of PDAs are usually beyond the reach of most intranet search engines.

The situation is not only frustrating, it is costly. The invisible intranet results in: poor decision making based on incomplete or faulty information; reinventing the wheel; losing sales when customers are unable to find the information they want on products or services; and lost productivity as employees stymied by a fruitless search, turn to their colleagues for help.

In aggregate, IDC says, Fortune 1000 companies waste \$5 billion annually due to employees duplicating information that already exists within the enterprise. And this, researchers hasten to add, is a conservative estimate.

On the other hand, the benefits of doing it right can be startling. IDC quotes one IT manager of a Fortune 500 company, “...by improving search and retrieval systems for just the firm’s 4000 engineers, the investment [was] recovered within a month and [contributed] to a \$2 million monthly productivity gain thereafter.”

Importance of Portals

"Unfortunately there's no simple answer to the 'invisible intranet' problem," says David Gee, General Manager of Yahoo! Enterprise Solutions group. "But a comprehensive solution based on the combination of a flexible, scalable enterprise portal equipped with a powerful search and retrieval system can significantly reduce the amount of 'lost information' and its negative impact on worker productivity and the company's bottom line."

In today's enterprise environment, the use of a portal can increase the company's productivity and efficiency by integrating information and applications in one central location accessible via a simple, familiar user

build and foster customer relationships essentially playing the role of a direct communications channel that offers services that drive customer usage and frequency. Successful enterprise portals are categorized by delivering several key benefits, including:

- Content aggregation, blending information from both inside and outside the organization.
- Organizations can easily integrate Yahoo! content into their existing portal(s) using My Yahoo! enterprise edition.
- Delivery of essential web services using recognized protocols such as SOAP, WSDL and UDDI.
- Integration of a variety of mission-critical enterprise applications.

age information retrieval solution that helps enterprise end users find information quickly and efficiently. Inktomi's search allows users to retrieve fresh, current information as it is created, saved and stored, no matter where it resides, its format, the application involved, or where the information originated within the enterprise.

Andrew Littlefield, Chief Strategist, Inktomi Enterprise Search, says that Inktomi Enterprise Search's streamlined deployment process minimizes both time and cost and quickens the enterprise's time-to-market. The technology driving Inktomi Enterprise Search allows the platform to scale to search millions of documents across thousands of servers in the most complex enterprise network environments.

Included is a high quality index and an intelligent retrieval search technology that uses natural language capabilities and advanced relevance algorithms. Users enjoy immediate results without using complex syntax or Boolean operations. Queries can be submitted in formats that are comfortable and familiar for users—specific phrases, keywords or even field searches.

Inktomi Enterprise Search's intelligent, real-time content discovery technology automatically learns how enterprise information changes over time and adapts in order to maintain the most current index. This combination of relevance and freshness ensures the most accurate results possible without degrading network resources or requiring time-consuming human intervention.

"This is a powerful technology," Gee says of Inktomi Enterprise Search. "It supports direct indexing of Oracle and other ODBC compliant databases. You can also completely customize the platform to match the look and feel of your corporate intranet or public web site."

Because of the global nature of e-commerce, the Yahoo! portal solution with Inktomi Enterprise Search is designed to support a variety of languages including complete grammatical and lexical analysis capabilities with localized interfaces and support for Unicode character sets. Inktomi's XML and Java API interface ensures integration with content management systems, Yahoo! PortalBuilder and other portal servers, as well as other enterprise collaboration and security applications. •

Yahoo! in Action

"Honeywell chose the Yahoo! Enterprise Portal solution in order to improve employee productivity and help its employees work more intelligently," notes David Gee, General Manager of Yahoo! Enterprise Solutions group. **"MyHoneywell.com was up and running in 90 days and was subsequently rolled out for use by about 120,000 employees worldwide."**

Employees use the portal to book their own travel, e-training such as management courses, change their pension and other benefit plans, view payroll and direct deposit information, and access Honeywell corporate information and industry news. Yahoo!'s global portal solution provides Honeywell with customization and personalization even at the local level. Honeywell developers use the portal server's browser-based administration tools to quickly customize default start pages for employees in Europe, Asia, the US and other offices around the globe.

Bask Iyer, CIO and VP of e-Business for Global Business Services at Honeywell, says, "The reasons Honeywell uses a Yahoo! solution are that it's proven, it works, it's very scaleable and our users love the content."

In today's highly competitive environment, the ability to integrate and access information across departments and applications on a worldwide basis is critical. "A user-friendly portal such as Yahoo!'s complete portal solution, combined with a powerful, state-of-the-art search engine like Inktomi Enterprise Search, is a winning combination," Gee says. "It's the answer to the challenge of the high cost of not finding information, while helping customers realize all the benefits associated with tapping the invisible intranet."

interface, Gee says. "You'll eliminate information glut and speed up your time-to-market through closer collaboration between your employees, trading partners and customers. Portals provide employees with self-service access to benefits information, company news, IT helpdesk, employee directories and other internal information and services. A personalized portal accelerates communications and collaboration and contributes to overall employee satisfaction.

"From the CIO's perspective," he adds, "a portal reduces demands on IT and cuts the costs of administering redundant processes. You can roll out new applications and services without incurring heavy training costs."

In addition, the portal can be used to

- Central organization and presentation of information via a single user interface that is as familiar and easy to use as My Yahoo!.
- Support for multiple platforms and open standards, such as J2EE.

Essential Search Capabilities

But even if a portal has all the features listed above, it's not going to pass muster unless it has a powerful, flexible search engine that allows the integration of information across departments and applications.

When Yahoo! sought an enterprise search solution that could handle the rigors of portal information search and retrieval, it turned to Inktomi Enterprise Search. The Inktomi platform offers an easy to deploy and man-

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GOVERNMENT I.T.

Hero Wanted, Cheap

By Michael Goldberg

"ATTENTION CIOs: Looking for an opportunity to serve your country in a post-9/11 world? For the incredible challenge of defining IT infrastructure that will support FBI investigations into terrorism, espionage and international crimes?"

This is the ad the FBI ran in *The Wall Street Journal*. The \$4 billion agency at the forefront of homeland defense is seeking a successor for Bob Dies, a career IBM executive who took the bureau's top IT job in July 2000. Applications closed in April. It could take until later this summer to fill the post, the FBI says.

The description posted on www.fbijobs.com makes it sound like Superman's cape would be a good thing to bring to the interview. To qualify, the website suggests that you be a proven leader with financial man-

agement know-how. You should possess the political savvy to build coalitions. You must manage a \$109 million IT upgrade and a \$59 million IT security and information assurance project.

And you'll do all that for a salary between \$125,972 and \$138,200 a year.

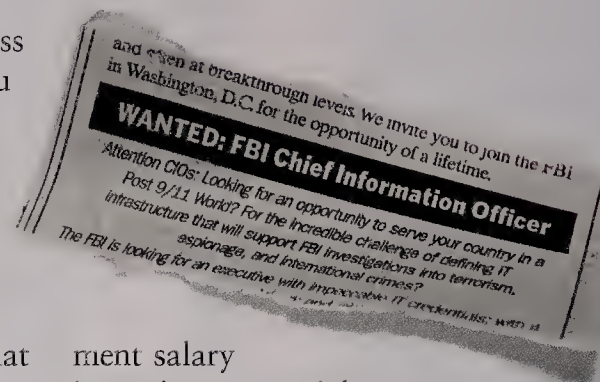
If that sounds low, that's simply what public servants make at that level, according to the Federal Office of Personnel Management. CIOs at comparably sized companies such as MGM Mirage, the casino owner, and Hormel Foods, maker of Spam lunch meat, earn more than twice as much on average (\$281,768), according to a recent CIO survey.

The kind of top-flight talent sought by the FBI would earn five or six times the govern-

ment salary in a private sector job, says Robert McHale, managing director at Korn/Ferry International. McHale, who helped the FBI's recruiting effort, says low pay didn't stop applicants.

"Here's an opportunity for them to give something back and to create their own legacy. So compensation has not been a major issue," McHale says.

And, of course, they might get a badge.



HOT TOPIC



SUPPLY CHAIN MANAGEMENT

The Few, the Proud, the Supply Chain

By Ben Worthen

WAR IS HELL and so is supporting one. Every time the Marine Corps goes off to fight, it needs soldiers for combat but also support personnel to manage the supply chain each mission requires.

There are five components to battle support.

Supply—getting weapons, ammunition and other goods to soldiers in the field.

Maintenance—making sure that the equipment is working properly.

Health services—providing onsite medical attention and evacuations when needed.

Transportation—getting the troops and supplies to the right place.

General services—mail delivery, for example.

As recently as 1999, the Corps had 206 logistics systems to handle those operations. It is now in the process of a major combat supply chain overhaul that will reduce shipping time by approximately 50 percent, eliminate between \$125 million and \$180 million a year in inventory costs, and free up 1,800

marines from logistics duty for redeployment in the field.

The Corps' logistics operations were in shambles during the Gulf War, says Sapient Senior Vice President Chris Davey, who oversees the supply chain overhaul. "They brought so much stuff, and they didn't know where most of it was. They had containers full of gear and no ability to track it." Other inefficiencies ate up time and money. The Corps was treating every item the same way regardless of what it was. There was no differentiation, for example, between the process for buying weapons and the process for buying pencils.

The revamped supply chain won't eliminate all legacy systems right away—the Corps does have a limited budget that it needs for operations like the current conflict—but it will replace inefficient processes. Battalion-level databases, for example, which tracked inventory for spare parts like Humvee engines, have been eliminated and replaced with databases that cover a geographic area. Also, the Iridium satellite system owned by the Department of Defense is now being used to facilitate the movement of supply requests from the front. Some of the supply chain improvements are already being tested in Afghanistan. The rest will be rolled out over time, from the halls of Montezuma to the shores of Tripoli.

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Washington Watch

Edited by Janice Brand

Doom for the NIPC?

IN LATE MARCH, rumors surfaced that FBI Director Robert Mueller was on the verge of dismantling the National Infrastructure Protection Center (NIPC), which has been the government's primary critical infrastructure threat assessment and response unit since its founding in February 1998. NIPC spokeswoman Debra Weierman insists that rumors of the center's demise have been greatly exaggerated. However, Mueller's April 2 appointment of Larry Medford—former head of the FBI's San Francisco field office, which just completed a two-year undercover counterfeit-software sting—as assistant director in charge of a newly created Cyber Division, casts the NIPC's future as we know it in doubt.

The Cyber Division's charter is vague. An FBI press release says that the division will “supervise and facilitate the FBI's investigation of federal violations in which the Internet, computer systems and networks are exploited as the principle instruments or targets of criminal activity.” Even a spokesperson admits that the new group's role isn't fully resolved.

Critics, including Sen. Charles Grassley (R-Iowa), interpret the Cyber Division's charter to mean that it will be put in charge of the NIPC, a move that could prove fatal to the government and private sector collaboration that the NIPC was formed to foster. The new division is clearly intended to be a law enforcement organization—it's even listed under the bureau's criminal investigations wing. In a letter to Mueller, Grassley warned that burying the NIPC deeper within the FBI's crime fighting bureaucracy would threaten the already-fragile trust between the center and the private sector, which controls 90 percent of the nation's critical infrastructure. Companies are already wary of



FBI Director Robert Mueller

sharing security breaches, he writes, and could respond by cutting off the flow of infrastructure information to the FBI.

The creation of the Cyber Division has other ramifications for the private sector as well. Ari Schwartz, an analyst for the Washington, D.C.-based Center for Democracy and Technology, says that there will now be more agents to process cyber-crime information—a classic double-edge sword. “The upside is that there are more resources to fight crime,” says Schwartz. “The downside is more people working without oversight. The USA Patriot Act [the omnibus antiterror legislation that sailed through Congress in the wake of Sept. 11] has a lot of demands on the private sector that were not well debated. There are companies that will be very surprised when the FBI comes knocking on their door, which they now have the resources to do.”

—Ben Worthen

Paranoia or Prudence? Banning Foreign Workers

ON MARCH 7, the *Los Angeles Times* reported that the Department of Defense (DOD) planned to ban foreign-born IT professionals from working on sensitive projects by midsummer. The controversial policy prompted Information Technology Association of America (ITAA) President Harris Miller to write a letter to DOD Undersecretary for Acquisition, Technology and Logistics Edward Aldridge expressing his concern.

“Public policy must be based on real-world actions and tangible threats—not supposition and innuendo,” wrote Miller. In a press time interview, Miller told *CIO* that since his letter, the timetable for the ban has been pushed back, but that as

far as he knows the DOD's intentions haven't changed.

Miller feels that the ban, which has yet to be debated publicly, would be a blow to small to midsize IT shops. The ban would cover all foreign-born employees, Indian programmers on H1-B visas and Canadian-born U.S. residents alike.

“It's inconvenient, but a big company can shift its workers around,” says Miller. However, the implication is severe “if you are a small or medium-size business and 10 percent of your workforce is foreign,” he says.

One thing is clear to Miller, however. “The slower track is definitely good news,” he says.

—B.W.

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Net Gains

Creating Value Online

Profit from Transparency

Should your customers compare prices, post opinions and pit you against your competitors? Absolutely.

BY MOHANBIR SAWHNEY

THE INTERNET HAS USHERED in the age of information democracy by shifting the balance of power toward customers. Nowadays, customers can compare prices through shopping engines such as DealTime and PriceGrabber.com. They can pit sellers against each other through reverse auction services like FreeMarkets. And they can get unbiased feedback on products and services through third parties like Amazon.com, BizRate.com and CNet. Information transparency is here to stay.

Transparency is a good thing for customers, but it seems to threaten suppliers. One of my favorite questions for executives is: If your customers knew everything about your products, your costs, your prices and your competitors' offerings, would you be better off? Judging from the uncomfortable silences I usually encounter in response, most executives believe that transparency is an enemy of profit. Their reasoning: Customers will take advantage of better information to drive down prices and profit. Harvard Business School's management guru Michael Porter echoes that thought. "The great paradox of the Internet," he says, "is that its very benefits—making information widely available; reducing the difficulty of purchasing,



marketing and distribution; and allowing buyers and sellers to find and transact business with each other more easily—also make it more difficult for companies to capture profits."

But is transparency always a threat to profit? Will it set off a spiral of lower prices, intensified competition and commodified products? Not necessarily. I believe that transparency can be good for profit. To profit from transparency, companies need to understand two key principles about customer decision making. First, customers never buy solely on price, even though companies might think they do. Second, prices may be transparent to customers, but value often remains opaque. By making their value propositions visible to customers, companies can benefit from the democratization of information.

I recently participated in a conversation between the CEO of a midsize pharmaceutical manufacturer and a supplier of plastics who was trying to get the pharmaceutical company to

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switch to plastic bottles instead of glass. Plastic bottles seem to be as close to a commodity as one could imagine. Naturally, the conversation began with the pharmaceutical CEO asking if plastic bottles were cheaper. Being a good marketer, the plastics manufacturer pointed out that the price of the bottle should not be the sole focus of attention. First of all, he said, plastic weighs less than glass, so the transportation costs for the drug

mentioned really cared about the total cost of producing, packaging, shipping and promoting their drugs. The CEO of Freightliner, a truck manufacturer, noted that customers don't want to just buy trucks. They care about "keeping 'em rolling." That insight spurred Freightliner to offer a diagnostics service for its trucks that predicts breakdowns, and a speedier process for delivering parts. You may find that the product cost is a small

component of the customer's total costs, and that price is only one of many variables that customers should consider.

There are two key principles about customer decision making. First, customers never buy solely on price. Second, prices may be transparent, but value often remains opaque.

company would be lower. Second, plastic is not as fragile, so the breakage loss would be lower. Third, plastic bottles would save on labeling cost because labels could be imprinted directly. Fourth, being a local supplier, the plastics manufacturer would deliver more frequently in smaller batches, resulting in reduced inventory holding cost. On the negative side, the production line would run somewhat slower with plastic.

As the conversation progressed, it became evident that the drug company's value equation for packaging included a number of considerations besides price. After accounting for variable costs, such as inventory, breakage, logistics and line efficiencies, the plastic bottles would be a better value even at a higher price. The moral: There is no such thing as a true commodity.

While suppliers should make their value propositions transparent to customers, customers are also realizing that it is in their interest to make their value equations transparent to suppliers. I spoke with a purchasing executive from a petroleum company about reverse auctions. Suppliers tend to hate them because large buyers use auctions to beat competing suppliers down on price, leaving the winners with a Pyrrhic victory. The purchasing executive said, "We provide all bidders in our reverse auction with the formula we use to weigh variables among competing suppliers. With this information, suppliers are able to make trade-offs among price and nonprice variables as they participate in the auction." In that case, transparency is good for suppliers who have superior value propositions, even if their prices aren't the lowest.

The key, then, to profiting from transparency is to sell on value, which involves three key steps.

1. Understand what customers really value. The pharmaceutical company

that customers can configure and customize to suit their priorities. I often find that companies bundle services with their products as value-added services. The problem is that not all customers value all the services. A software customer who has a strong IT organization may not value support as much as another customer who relies more on outsourced IT support. Allow customers to choose the services they value and to pay for only what they use.

3. Communicate your value proposition. You need to educate customers about the elements of your value proposition. Customers often may not even know what variables they ought to be thinking about and how you stack up against competitors. Internal communication is equally important. The sales organization will tend to use price as its only competitive weapon if it doesn't really understand the company's value proposition. Obviously, the sales force has to be able to quantify the economic benefits of nonprice variables.

By following those steps, companies that truly provide better value will profit from transparency—they'll move the conversation with customers away from price to value. So, transparency is not necessarily an enemy of profit. But it is an enemy of profit based on customer ignorance. The sobering question you need to ask yourself is, Is an informed customer really a better customer for my company? If the answer is yes, you should embrace transparency by making your value proposition explicit to your customers. If the answer is no, you need to find another way to make a living. **CIO**

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Are you ready for transparency? Let us know at **CIO READER POLL** at www.cio.com/readerpoll.

How well do you know your customers? Let us know at netgains@cio.com. Mohanbir Sawhney is the McCormick Tribune professor of e-commerce and technology at Northwestern University's Kellogg School of Management and a fellow at DiamondCluster International. He can be reached at mohans@nwu.edu.



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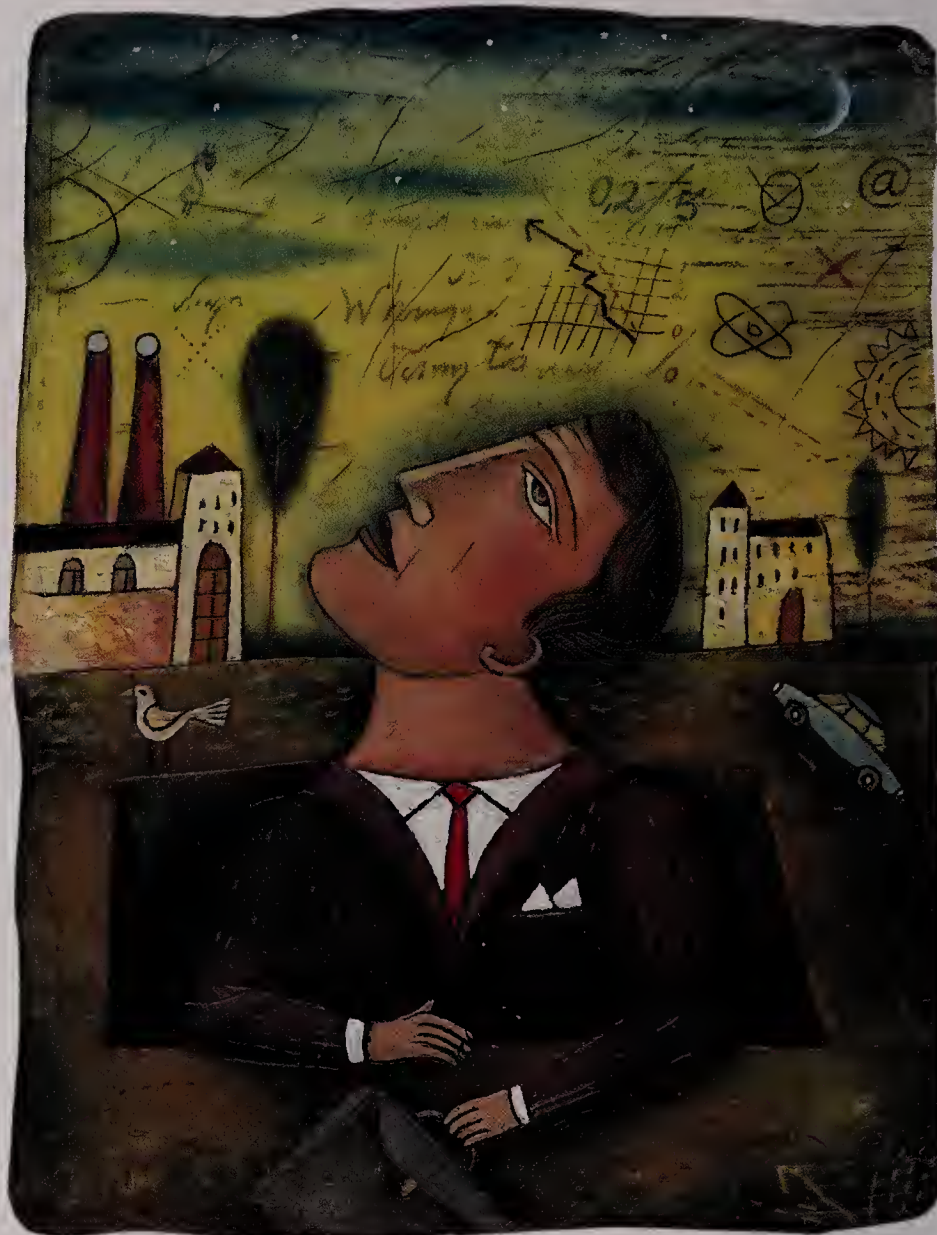
Today the CIO role can be as big as you want it to be

BY JOHN J. CIULLA

WHEN I FIRST JOINED the elite ranks of the basement dwellers back in 1981, the term *CIO* didn't even exist. In fact, we didn't even use the term *information technology*—first it was data processing, then it was management information systems (MIS). And looking back, it seems like we really did spend an awful lot of time down in the basement, just trying to keep our network up and running.

Even in 1993, when I landed my first CIO gig at Entex, our infrastructure gave me many sleepless nights. I was constantly worrying about uptime and putting out fires. Granted, it was my first time performing the CIO role, but it seemed like I just never had a chance to take off the pocket protector and become a part of the culture of my company.

Yet while I may not have been able to feel it at the time, by then a transformation was beginning, and technology was starting to catch up to the speed of business. Today the systems and management tools out there are so good that to say I have nearly 100 percent uptime doesn't seem like much of an accomplishment. Uptime today is like dial tone—you simply expect it to be there. These days I spend less than 50 percent of my time



on the traditional CIO task of managing information systems. But I'm busier than ever.

A Strategic Player

We all know that the role of the chief information officer is dramatically different now from what it was 10 years ago or even two years ago. Today's CIO has moved out of the basement and into the boardroom, becoming a key figure in purchasing decisions, operational strategy, even marketing and sales. Whether we're creating the next killer app to keep our company one step ahead of the competition or strategizing with the marketing group about how to appeal to other IT decision makers, today the CIO is a vital piece of any company's strategic puzzle. The question is, how do we convince our business peers of that?

For me it all began to change during my second stint as a CIO,

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at Tivoli Systems. I was more comfortable with the challenges of the position by then, and the technology was already reliable enough to free me up for some actual management work.

I began to look at my IT department as an organization in and of itself. After all, we had an infrastructure. We developed products. We had a plan and a strategy. We had to align ourselves with the needs of our internal customers. The only thing we were lacking was a marketing and sales component. So we decided to create one and promote our organization within the company.

We began a series of three six-month campaigns to reach out from our IT group to the rest of the company with something that everyone could relate to. Our slogan for the first cam-

their businesses—and enhance their own careers in the process—are greater than ever before.

Running the Business

Today at Vignette, I'm involved in many aspects of the company outside of IT. Since Vignette is a software maker, my IT department is not only creating the next killer app to drive our CRM systems forward, but we're using our own software. That in turn helps our sales guys go out and prove to the world that what we're selling works.

On the other hand, as a CIO, I'm constantly getting spammed by solicitations from other software companies. Most of these e-mails and letters are ineffective for one reason or another, and

I end up deleting dozens of them every week. I've started talking to our marketing folks about why that is—I am, after all, the spammers' target audience. By all accounts my experience has proven invaluable to our marketing staff, and I now meet regularly with them to strategize and offer feedback on their ap-

proach for our company. Similarly, I've used some of my own contacts within the CIO world to help our sales guys get a foot in the door.

The extra activities have continued to grow to the point where I'm now running around quite a bit. Last week I was on the East Coast meeting with major client prospects. Next week I'm off on another, similar junket. It's hectic but challenging, and very rewarding. I'm helping to run a business at the highest level. It's hard to believe this is the same job I had at Entex nearly 10 years ago. Today I'm all over our company and all over the country. Back then, I was in the basement.

It's partly that technology itself has come so far—it's more reliable and more valued companywide. But it's also largely because I made a conscious effort to step out of the CIO mold and lead my organization.

The role of the chief information officer is changing in many ways, and that's due at least in part to the fact that *we* are changing it. There's been a shift in perception that's opened the door for all of us to expand our responsibilities and our careers. Maybe you won't end up wooing the company with a canoe full of beer, but with the business skills, experience and insight that CIOs possess today, there are endless opportunities for you to bring new value and new leadership to any organization. **CIO**

John J. Ciulla is chief information officer at content management provider Vignette Corp., headquartered in Austin, Texas. He can be reached via e-mail at jciulla@vignette.com.



It's hard to believe this is the same job I had nearly 10 years ago. Today I'm all over our company and all over the country. Back then, I was in the basement.

paigned was, "We're All in the Same Boat," and to kick it off, we painted a canoe with Tivoli colors, filled it with ice and beer, and presented it to the rest of the company at a Friday afternoon beer bash. During the next months we put up posters to generate awareness and excitement for the follow-up campaigns—"Row the Boat" and "Win the Race."

In the end those campaigns were a huge success for us, and they really helped the people in my division feel like they were part of something unique. The effort brought us together as a team, and in the mid-1990s, happy employees were a major business imperative.

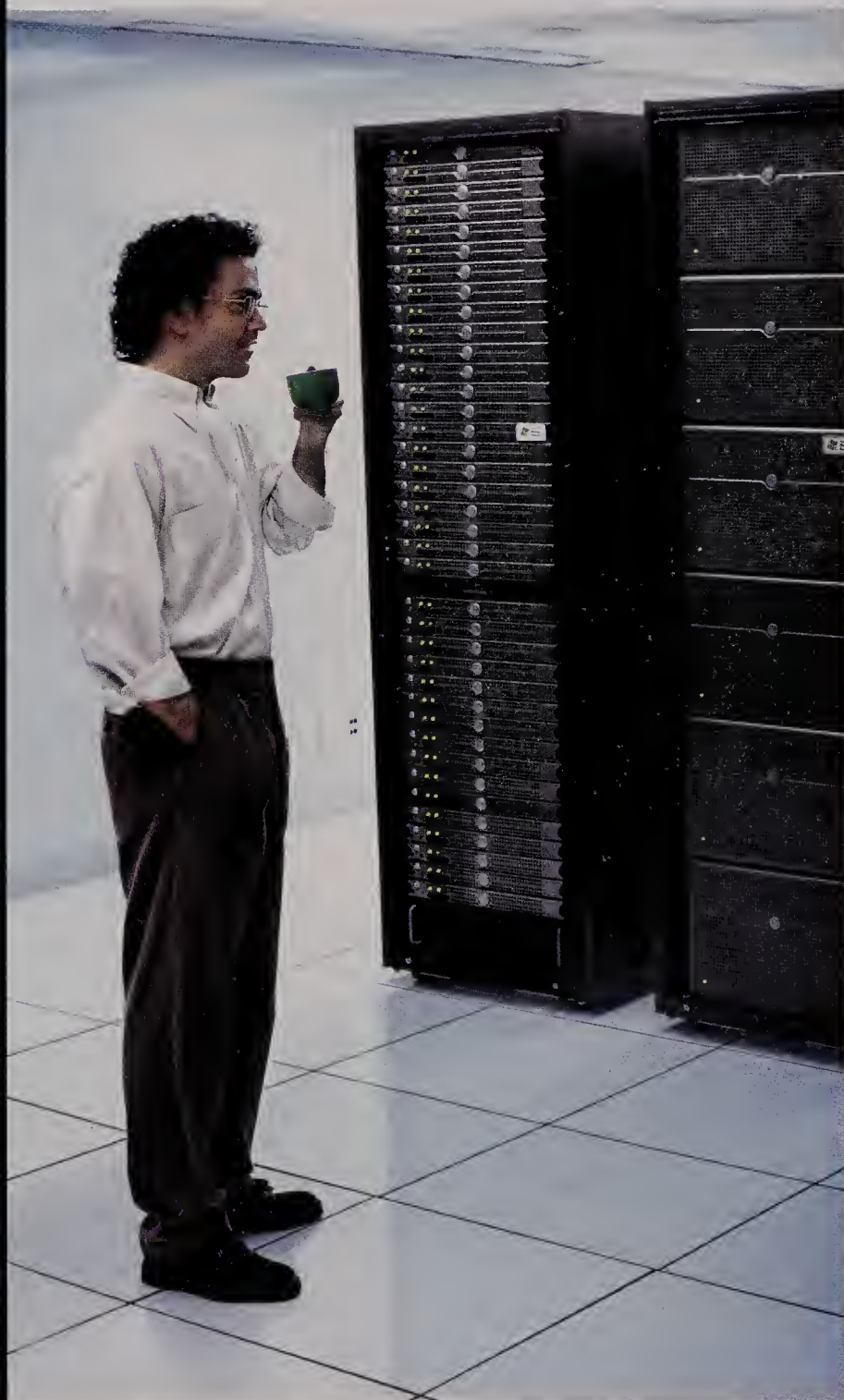
But the campaigns were also for the folks outside the IT department. The effort got people from all over the organization to notice who we were and what we stood for within the company. I soon found that not only were members of my team more satisfied with their jobs, but I started getting invited to lead other initiatives beyond IT, eventually heading up the company's leadership and communications task force and some other cool activities outside of the traditional CIO role. My responsibility grew, and thus I began reporting directly to the CEO.

Now, not every corporate culture would allow an executive to tote a canoe full of beer into a Friday afternoon gathering, but our campaign at Tivoli was just one example of how today's CIO is more than the alpha geek.

Chief information officers today are true C-level executives, and as such they are being asked to display real business skills and strategic insights that can benefit the company as a whole. The opportunities for CIOs to provide new kinds of value for



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Many promise a path to XML Web services, but only .NET

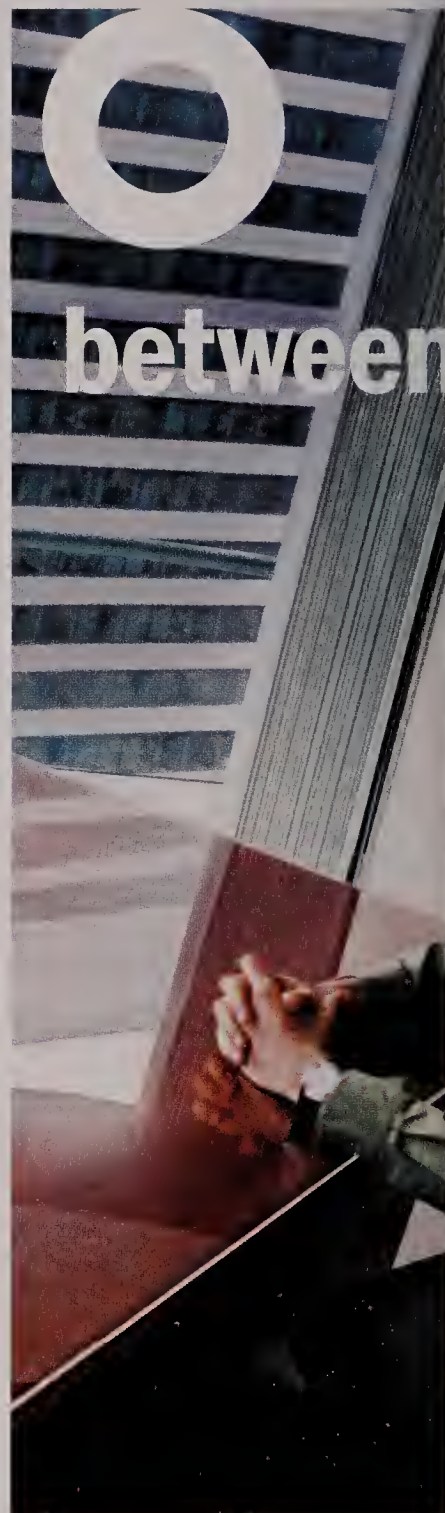
connected software from Microsoft offers you a complete set of tools, servers, and applications for transforming your business using your existing infrastructure. One software solution takes you all the way from code to client.

"If one word best represents the past year's most significant news story in software development, it would be .NET. If you were to look for two words, they would be 'Web services.'"

—SD Times, "Web Services, .NET Highlight 2001," Alan Zeichick, 1/1/2002

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between

pipe dream and pipeline.

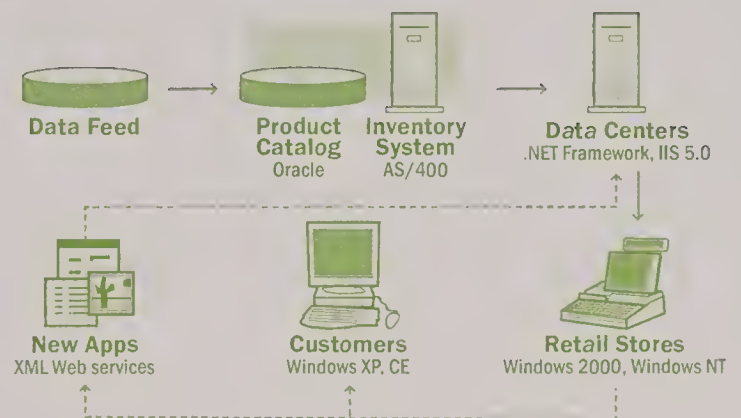
Where your CEO's vision meets IT reality. It's one thing to map out the future. It's quite another to unlock the value in your infrastructure that will get you there. Fortunately, XML Web services built with .NET connected software make it a lot easier to connect the code and systems you already have to each other—and to the new stuff you need.

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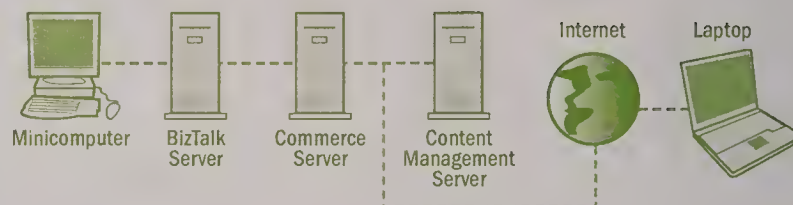
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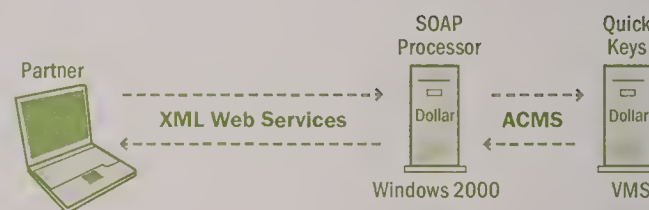


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How Royal Canadian Mint used .NET connected software to create new revenue streams. Founded in 1908, the Royal Canadian Mint was looking for new and better ways to reach out to customers for its evolving catalog of precious metal collector coins and jewelry. With .NET connected software they were able to create a next-generation e-commerce site that delivered dynamic content management, personalization, and advanced business analytics while drawing on information in a legacy database and feeding orders through an existing ERP system. Microsoft BizTalk® Server 2000, with native XML support, integrated the data seamlessly for smoother transactions and more efficient order processing. To see a webcast on redefining the online enterprise, visit microsoft.com/solutions/msib

How Dollar Rent A Car used .NET connected software to drive new business partnerships. Dollar Rent A Car is a world-leading car rental agency, with a fleet of 75,000 cars and more than 250 locations across 26 countries. They saw that integrating their VMS-based reservation system directly with partners would drive sales and reduce the cost of transactions. Using .NET connected software and BizTalk Server, they were able to develop an XML-based trading partner integration solution in weeks rather than months—a 75 percent reduction in development time. The same solution also helped Dollar to significantly reduce transaction costs with its partners. To get a resource and evaluation kit for this case study, go to microsoft.com/business/casestudies/b2c/dollarrentacar.asp

How CompUSA used .NET connected software to accelerate business intelligence. CompUSA had 228 retail stores, a services division, corporate sales, and a training division. Moving forward, they wanted to maximize the value of customer and sales data stored on a reporting system on an AS/400; an SAP system running on SQL Server 2000; Oracle databases; and several custom solutions. Using .NET connected software, CompUSA was able to extract their POS data and consolidate it in a central data warehouse where it can be analyzed in near-real time. So, store managers can see what adjustments are needed to meet opportunities as they arise. To see a video report on this story, go to microsoft.com/SERVERS/evaluation/casestudies/compusa.asp



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COVER STORY
B2B Partnerships

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In **How to Practice Safe B2B**, IT and security leaders spell out their security requirements for their online partners and explain how they make sure their partners comply.

In **How to Grow Your B2B Network** (Page 60), companies reveal the techniques they're using to attract new partners, thereby maximizing their B2B savings and revenue.

The money is there. Go for it.



James Wade, chief security officer for the Federal Reserve System, advises companies to forbid their partners to use departmental passwords for B2B interactions.

PHOTO BY KATHERINE LAMBERT

how to practice safe b2b

Before swapping information with multiple e-commerce partners, it pays to protect yourself by pushing partners to adopt better security practices

BY ERIC BERKMAN

IN SUMMER 2000, Visa unveiled its "Digital Dozen," a list of security requirements calling for firewalls, encryption, testing and access policies that its service providers and merchants must have as a condition of doing business with Visa. That's right—if a bank or merchant can't play by these rules, they don't play with Visa.

Visa's merchants and service providers must annually demonstrate compliance, through an online self-assessment for Mom-and-Pop shops and extensive third-party audits for merchants or service providers handling large volumes of cardholder information. And if a

Reader ROI

- ▶ Learn why unsafe B2B partners threaten your security
- ▶ See the requirements for safe B2B
- ▶ How to coax reluctant partners to adopt secure practices

merchant refuses to comply, Visa can fine the bank that processes that store's transactions. Then it's up to the bank to punish the merchants. "Eventually, if we don't have proof from an independent third party that you qualify with our requirements, we really don't want you to take the card," says John Shaughnessy, Visa USA's senior vice president of risk management in Tampa, Fla.

Not everybody is as deadly serious about

B2B e-commerce partner security as is Visa. In the stampede to e-commerce, most companies have disregarded the security of their partners and their role in exerting pressure to make sure they're safe. "My sense is that B2B security is not a consideration for many organizations," says James Wade, chief security officer for the Federal Reserve System and president of Framingham, Mass.-based ISC2, a training and professional certification organization for IT security professionals. Many B2B relationships spawn from manufacturing, marketing or some other group within an organization without involving IT security.

That may or may not be the case in your company, but regardless, it's your responsibility to see to the security credentials of your B2B partners. "The security of your B2B partner is as important as their creditworthiness," says Paul Gaffney, CIO of Staples, the office-products retailer based in Framingham, Mass.

Indeed, the risks of working with a non-secure partner are frightening. A partner that fails to secure its own systems could become a launch pad for attacks into your system. Someone could tamper with data in a supplier's system, such as switching a digit in a product SKU number. Or a virus could disable your partner's systems. Either way, your just-in-time supply chain operations will grind to a halt. Worst of all, you might incur legal liability if your partner exposes your customers' data. "Your customer will ask, 'Why didn't you investigate this partner?' That customer can sue you," says Dorsey Morrow, general counsel for ISC2.

Of course, it's not just about the risks. Safe B2B e-commerce carries huge business benefits too. In fact, companies can market the security of their B2B programs to enhance customer confidence and thus attract additional partners. Safer B2B practices also protect against glitches and outages, preserving the critical just-in-time nature of e-commerce, which keeps the revenue flowing.

With so much to lose and to gain, every company should establish a set of security

expectations for its B2B partners, drawing from the list that follows. In addition, take heed of the strategies to counter resistance and enforce compliance since you will be dealing with companies that aren't under your control.

Requirements and Expectations

■ A DOCUMENTED SECURITY POLICY

Security experts say every company should demand to see its B2B partners' written security policy. Lee Holcomb, CIO of NASA in Washington, D.C., says that is something he's strict about because he uses online connections to post competition opportunities and pay aerospace vendors and contractors. He expects policies to include firewall maintenance and patch-service provisions and to provide for vulnerability assessment and intrusion detection, as well as a training program for systems administrators who would have access to sensitive information. "We're dealing with astronauts or pilots in space," says Holcomb. "Security and safety are synonymous."

The Federal Reserve typically asks for a written description of a partner's security organization, including its rules and responsibilities and where the security function reports. "If security is buried in the technical bowels of an organization, it's probably not having significant influence on senior management," Wade says.

The policy should also identify individuals managing the partner's security program, adds Harry DeMaio, a director in Deloitte & Touche's enterprise risk practice in New York City.

■ SECURE APPLICATION DEVELOPMENT PRACTICES

In most B2B relationships, partners grant limited authority to pass into each other's systems and access critical information. If your partner is using proprietary applications that touch your system, security must be built into that application. Your partner must show you how security is incorpo-

Checklist for Secure Partnerships

What you should expect or require of your B2B partner

1. Maintain working firewalls.
2. Keep security patches up to date.
3. Use and update antivirus technology.
4. Maintain a comprehensive, written security policy.
5. Adhere to a secure application-development methodology and build security into all applications.
6. Utilize access-control and authorization tools appropriate for the type of information to be accessed, stored or transmitted.
7. Encrypt any sensitive information transmitted over the Internet.
8. Maintain active threat-monitoring and response procedures.
9. Require notification of any security incidents.
10. Require security verification through third-party audit or penetration testing.
11. Segment the network architecture.
12. Conduct background checks for all employees who may access your company's sensitive information.
13. Require contractual indemnification for damage and liability caused by a partner's security failure. **-E.B.**

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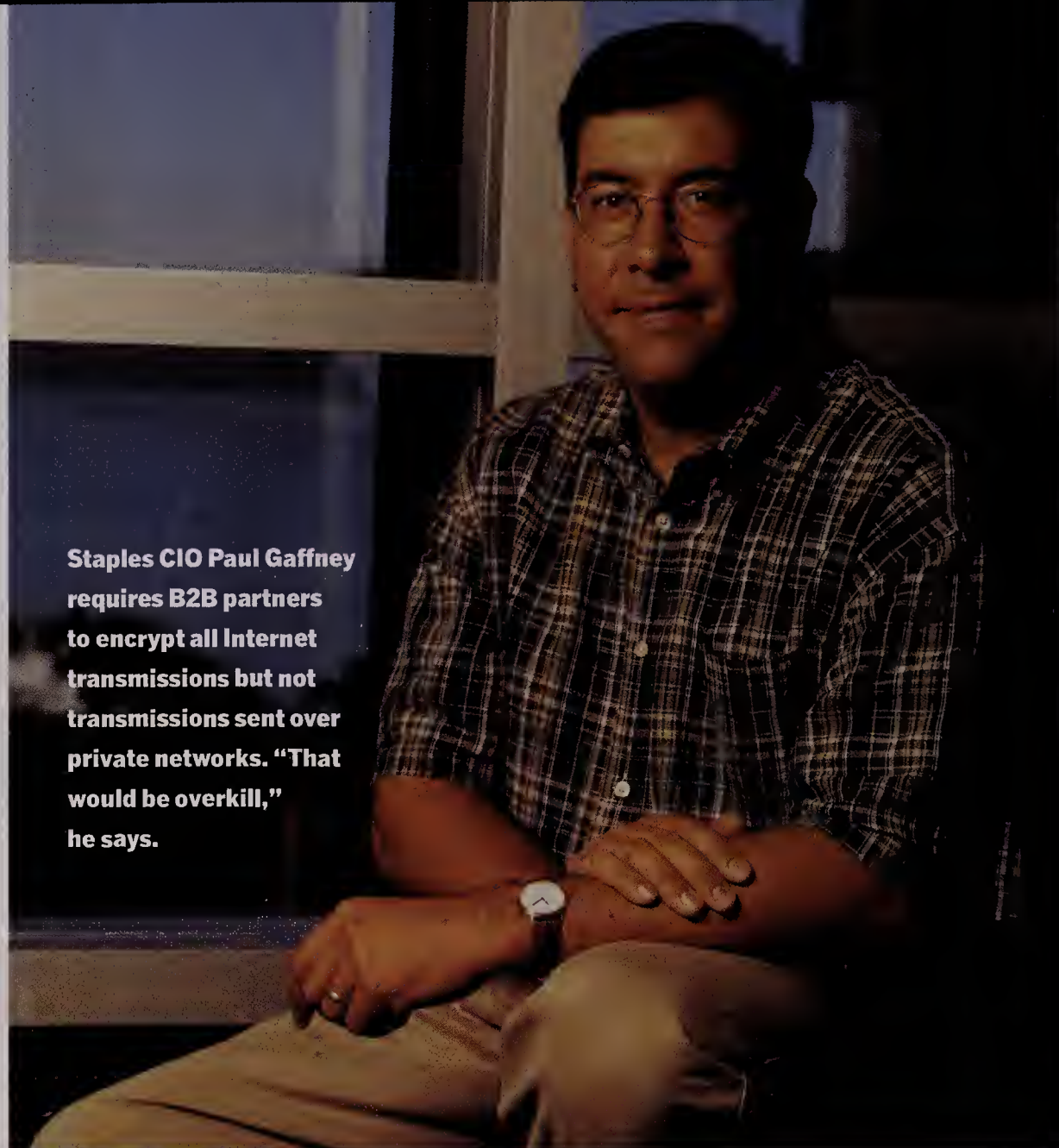
rated into its application design, development and deployment plans, says DeMaio. Look for access and authorization controls built into applications, path isolation to ensure that the app's user goes only where he's allowed to go, and logging and reconciliation to provide a record of where any user has been—matching up with what he's done. "Make sure the application doesn't turn off or ignore other security controls, like encryption, associated with the [B2B] system," adds DeMaio.

■ ACCESS CONTROL AND USER AUTHENTICATION

Lax access controls within your partner's systems will give you an Excedrin headache. Ray Bedard, a partner in PricewaterhouseCoopers' supply chain practice in Virginia Beach, Va., tells of a company he worked with that failed to terminate a departing employee's access to its B2B applications. Before the employee left, he went into the system and ordered a bunch of goods from an online partner. The goods arrived and nobody could figure out what they were doing there. It took several hundred man-hours for the parties to resolve the mess.

To avoid that sort of tampering, companies should require partners to maintain strong, active password programs. Measures should include requirements to change passwords frequently, monitoring and logging of password usage, tools to detect easily guessed passwords and a central authority to set access policies. Wade adds that you should forbid your partner to set up departmental passwords if the partner accesses your systems through its network. "This is always a sticking point in negotiations," he says. "The partner always wants to use some easier form" of password protection.

For sensitive information, companies should require higher-level access and authorization tools. Ramana Palepu, CTO of the Worldwide Retail Exchange in Alexandria, Va., says his members require public-key infrastructure authentication technology, and will expect digital signatures for



Staples CIO Paul Gaffney requires B2B partners to encrypt all Internet transmissions but not transmissions sent over private networks. "That would be overkill," he says.

financial settlement and payment services the exchange may offer in the future. But for less sensitive transactions, such as purchase orders, auctions and item tracking, strong password and user-name controls suffice.

■ ENCRYPTION

Experts and practitioners say companies should require their partners to use encryption for any sensitive information—customer data, marketing strategy, labor relations and unreleased financials—transmitted over the Internet. The Federal Reserve is constantly dealing with financial information, so Wade requires anything transmitted between the Fed and its financial and banking partners to be properly secured.

At J.P. Morgan Treasury Services in New York City, Joe Calaceto, who heads up security as vice president and technical director, requires varying levels of encryption of customer information such as account numbers and beneficiary names and addresses.

Gaffney says Staples requires its B2B partners to encrypt all Internet transmissions,

but he doesn't require encryption for transmissions sent over private networks. "That would be overkill, since one of the reasons we're paying a premium for a private connection is for its security," he says.

■ RESPONSE PLANS

DeMaio says the response plan is where to expect resistance from partners. Most companies focus on perimeter defense because it's sexy, but once they think nobody can get in, detailed response plans seem like overkill. That is a mistake, and you shouldn't let your partners get away with it, says DeMaio. "Too many organizations will simply fade and say, 'OK, you don't have to do it.'"

DeMaio adds that partners should provide a detailed description of their attack response plan—and it should be designed around specific systems, not generic boilerplate from books and manuals.

Also, demand that partners notify you of security incidents within the hour. Charles Le Grand, director of technology practices at the Institute of Internal Auditors in

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Altamonte Springs, Fla., adds that you should ask to see your partners' criteria for notifying authorities and how they're monitoring for vulnerabilities. For example, if they operate in an NT environment, urge them to keep up with NT BugTrack, he says.

■ SEGMENTED ARCHITECTURES

Some security analysts advocate "segmenting" enterprise architectures into smaller networks, all behind separate firewalls. That way, if one part of the network is compromised, the rest remains safe. Bethesda, Md.-based defense contractor Lockheed-Martin does that—and looks for it in its partners too, says A. Padgett Peterson, Lockheed's senior security analyst. (For more on Lockheed-Martin's strict security parameters, see "Maximum Protection," at www.cio.com/printlinks.)

■ BACKGROUND CHECKS

If it's standard practice in your own organization to conduct background checks on employees with access to sensitive data, it's reasonable to request the same for partners' employees who also have access. Wade declined to say whether he requires background checks of the Fed's partners, but he's required it while working at other companies. By having business representatives, not just IT people, involved in the negotiations, you're more likely to get your partner to agree to background checks. "It's difficult for many IT people to appreciate the risks involved in the relationship being established," he says.

■ COMPLIANCE AUDITS

Experts and practitioners agree the best way to validate compliance is through periodic audits, either by your own auditors or an independent third-party security company, as Visa requires. Typically the party requesting the audit will foot the bill.

The most security-conscious organizations require their partners to submit to penetration testing on a regular or random basis. But Le Grand says that is an extreme measure, because there is potential to bring a partner's

system down. "If you run a denial-of-service attack just to see how they recover, the recovery will be expensive," he says. "So you'd better not do this haphazardly and without agreeing on your right to do this."

Inducements and Enforcements

■ THE CARROT

If you work for a powerful company with partners that absolutely depend on your relationship, like Visa, you have the power to make demands. Unfortunately, most companies don't fit into that category. Instead, they must come up with carrots to entice partners to agree to their terms and incorporate them into contracts.

For example, if your partner objects to security requirements because of cost, offer to share some of the cost. A partner "might balk at an extra few hundred dollars to pay for the setup of an extra server," says Calaceto. "In some cases we'll absorb it because we want a more secure system."

Or you can offer to include your partners in your security software licensing agreements to save them a few bucks, says Le Grand. Here Bedard advocates a "matching fund," where a company offers to kick in a dollar for every dollar its partner spends complying with the requirements.

Finally, Gaffney suggests offering discounts or preferred-seller status to partners that accept your requirements. "If a company associates economic value [with its requirements], it needs to be part of the negotiation," he says.

■ THE STICK

Enforcement is an issue that companies should plan for in advance, with the hope of never having to exercise the stipulated penalties. The best way to enforce security requirements is to establish them in your B2B engagement contract. That provides a specifically delineated recourse should the partner fail to implement sound security measures. According to ISC2's Morrow, the ideal recourse against a lax partner is indemnification—an agreement that if you

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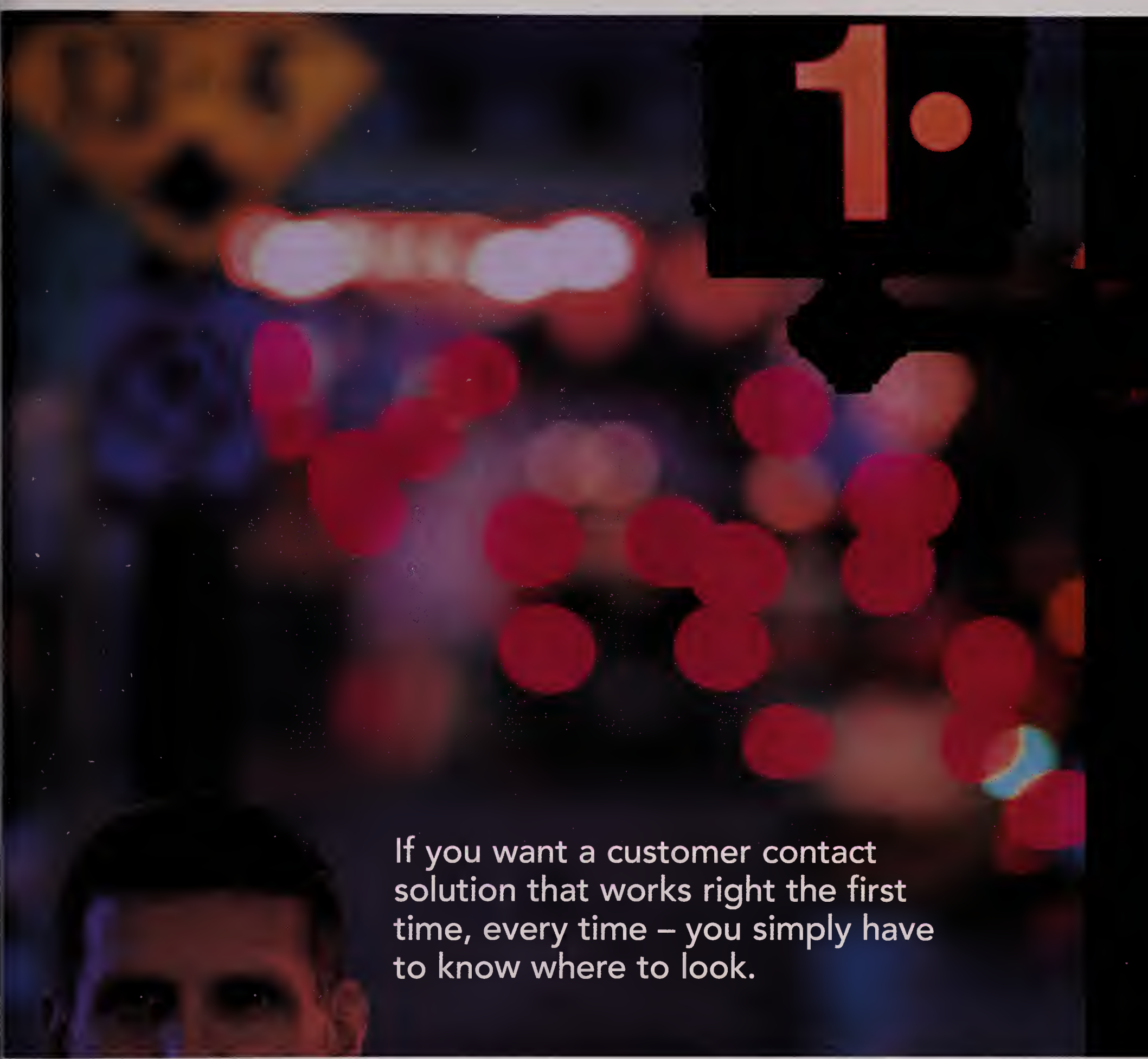
get sued for damage caused by your partner's breach, the partner will pay you back the amount of the judgment. Of course, that requires proving that your partner was truly responsible.

On a case-by-case basis, Staples will provide in its B2B contracts that the partner will indemnify Staples for damage or legal liability stemming from the partner's security lapses. But Gaffney says such a provision can be tough to secure. "The bigger companies—particularly larger software providers—tend to stick hard to holding back on indemnification," says Gaffney, adding that smaller companies might agree to indemnification in return for more favorable pricing or product distribution.

Another form of recourse is a liquidated damages clause—a contract provision stating that a partner that doesn't live up to its security obligations (resulting in contract cancellation) will pay the other partner a set amount of money.

Finally, if a partner violates the contract by, say, failing the audit, you have the right to terminate it. But think twice about applying these sticks just because your partner has fallen short on an audit or failed to meet a particular requirement, especially if you haven't been harmed as a result. The ultimate objective of your B2B engagement is a productive, profitable relationship. The minute you seek to terminate the contract or collect fines, you've likely destroyed the relationship. You're much better off working with the partner to remedy its lapses, ensuring a safer and more profitable partnership for the future. **CIO**

How do you maintain safe B2B relationships? Let B2B Editor Elana Varon know at evaron@cio.com. Eric Berkman is a former senior writer at CIO.



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BY MERIDITH LEVINSON

how to grow your b2b network

THE NEXT TIME you're ready to brag about your company's B2B e-commerce strategy, hold your tongue. Chances are, you're leaving millions of dollars on the table in spite of your best efforts to do business electronically with your partners.

Although B2B e-commerce has been the talk of the town for years and has survived more than one antihype backlash, the truth is that few companies today are actually transacting the bulk of their business through electronic connections, be they websites, public or private exchanges, one-to-one links with business partners or EDI. Aberdeen Group reports that more than 60 percent of suppliers in all industries continue to receive orders via fax or e-mail. And a mere 4.5 percent of

all purchasing dollars are transacted through B2B e-commerce, according to a 2002 survey by the Center for Advanced Purchasing Studies. With so few transactions conducted electronically, companies are missing out on the full value of B2B e-commerce.

Louis Columbus, a senior analyst with AMR Research in Boston, says procuring direct materials via phone, fax or e-mail costs between \$160 and \$200 per transaction, while the same activity executed electronically rings up as low as \$40 per transaction—a fivefold savings. Aberdeen Group estimates that automating procurement activities will save midsize companies \$2 million per year. And that's not to say anything of the cost savings resulting from better supply chain collaboration. Indeed, the advantages of B2B e-commerce include savings in administrative costs; decreases in acquisition, purchasing and payment cycles; reductions in errors and product returns; better inventory data; and incremental revenue growth.

The key to reaping those benefits lies in recruiting the multitude of business partners that have yet to sign on for your B2B trading.

Of course, there are other obstacles to B2B ROI besides participation: legacy systems ill-equipped to deal with B2B transactions, the volume of legacy processes that need to be mapped and automated, and the lack of standards. Security fears are also a concern for many companies loathe to see their data flow over the Web into companies that aren't under their direct control.

(Read about how to secure your B2B partners in "How to Practice Safe B2B," Page 52.) Nevertheless, recruitment remains a critical challenge.

Forget the 80/20 Rule

Although it seems intuitive to get your biggest customers and suppliers on board with B2B first, you must devote some of your efforts to automating tier-two and tier-three customers and suppliers. While the third tier may generate just 20 percent of your revenue, those companies are often the most costly to deal with per transaction, making their conversion to cheaper e-commerce all the more urgent. As for tier-two suppliers, over time they'll become tier ones, says Rowland Archer, CTO of Holcomb, Archer, Heber & Tyler Commerce, a provider of software that facilitates B2B trading based in Research Triangle, N.C. "It's worth looking at them and finding out who's doing the volume that would merit tight integration," Archer says.

But trying to get these smaller partners doing business electronically can seem like an insurmountable task. Unless you're Intel or Wal-Mart and can force your partners to comply with your standards, you'll have to use the subtle strategies of companies such as

BorgWarner, Celanese Chemicals, KeyNext, Panasonic Industrial and Sigma-Aldrich. While they're making inroads, these companies have miles to go before they reach the land of B2B gold. Here are the strategies they've devised and used in their recruitment efforts.

Strategy 1

TAKE YOUR CUSTOMERS' B2B TEMPERATURES

Before you begin warming your business partners to the idea of using the Web instead of phone or fax, you must first determine their readiness for B2B e-commerce. Sigma-Aldrich, a \$1.2 billion manufacturer and distributor of chemicals, has more than doubled the amount of business it does electronically each year since 1999. To enable those gains, the company trains its field sales force to ask customers questions to gauge their interest and alacrity in e-business. When visiting customers, the sales staff asks them what they know about e-business and if they've tried ordering over the Web or through an exchange. The salespeople also ask if customers are considering rebuilding their purchasing systems, and if so, how they're going about it and whether Sigma-Aldrich can participate.

"From those discussions,

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- ▶ Five strategies for signing up partners
- ▶ Incentives for e-commerce resisters

we identify the organizations that are in the midst of grappling with this topic, and we partner with them to determine the problems and pitfalls associated with deploying enterprise-scale procurement systems,” says Brad Johnson, Sigma-Aldrich’s director of e-business.

Strategy 2

APPOINT AN E-BUSINESS IMPLEMENTATION MANAGER

Although your sales staff can identify prospects for B2B recruitment, you’ll want to designate an individual or team that will sell one or several of your business partners on the benefits of e-business and serve them in their deployment efforts. This relationship manager should discuss with the partner technology issues such as infrastructure and data transfer, processes for payment, procurement, invoicing and

order fulfillment. The manager must work to develop an understanding of what the partner wants to get out of participating in your company’s B2B network.

KeyNext, the e-business arm of financial services company KeyCorp in Cleveland, has a sales team composed of relationship managers that, on an ongoing basis, works with both suppliers and buyers who participate in KeyProcure, the company’s e-marketplace. “Very often this is a change management issue for them,” says Amy Anderson, KeyNext’s director of technology and operations. That’s because the role of purchasing managers generally changes after B2B implementation. Instead of handling the purchasing process centrally, they redistribute process management to other buyers in the company, establish a new approval process and manage indirect purchasing more strategically, says Linda

Grandstaff, KeyNext’s president and CEO.

Strategy 3

SHOW THEM THE MONEY

Jack Kalina, BorgWarner’s CIO, says that when his company’s purchasing organization set out to involve suppliers in B2B trading, BorgWarner had to demonstrate that the value its suppliers would realize would exceed any cost that might be incurred. The \$2.7 billion Chicago-based company makes transmissions, systems and components for engines, four-wheel-drive systems and fuel systems for automakers. BorgWarner explained to its suppliers that connecting via GE Global Exchange Service’s TradeWeb exchange would prevent the manual error of transposing part numbers and quantities, which would reduce the number of returns the supplier would have to process or excess inventory concerns.

“Nobody changes a method in business unless there’s a reasonable level of comfort that it’s going to work and that it’s going to be cost-effective,” says Kalina. Of BorgWarner’s 800 suppliers of direct materials, 400 are connected via TradeWeb.

Panasonic Industrial creates a value case for its third-party logistics providers that are servicing the OEM customers so that the customers can see what’s to be gained from linking their warehouses to Panasonic Industrial’s ERP system. Sixty-five percent of all of Panasonic Industrial’s orders each year are processed electronically. “I researched the total quantities of offline warehouses, the number of transactions, and the number of entries on orders, deliveries and invoices,” says Ken Jeanos, group manager of e-business at the Seacausus, N.J.-based company. “I then went to our accounting groups and asked how often they find discrepancies that need to be reconciled. I showed these numbers to my customers.” Jeanos’s customers couldn’t argue with his math.

Jeanos also calculates cost savings from automating business processes. For example, he determined that creating and sending an order and an invoice electronically takes just

“Too many companies devote recruitment efforts to senior management. The reality is, it’s lower-level people who can really help or hinder your B2B activity.”

—Brad Johnson, director of e-business, Sigma-Aldrich



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a half day while doing the same thing manually takes two days. To determine the cost savings associated with that reduction in processing time, Jeanos multiplies administrative costs by the percent of time each month that's spent on those activities.

Strategy 4

DON'T FORGET THE END USER

Recruiting partners for B2B can resemble selling an IT project inside your organization: You need buy-in from end users as well as executives. "Too many companies devote adoption to senior management," says Sigma-Aldrich's Johnson. "The reality is, it's the lower-level people you serve who can really help or hinder your B2B activity," he adds.

While it's possible to convince purchasing agents and other executives using high-level cost/benefit, risk/reward analyses, such as the ones Jeanos whips up, the key to winning over front-line workers is to understand their needs and curb their fears about technology rendering their job obsolete.

Celanese Chemicals addresses that issue by pointing out that B2B e-commerce won't replace end users but will change their role from executing mundane, repetitive tasks, such as tracking down purchase-order approvals, to higher value activities such as procurement analysis. "We're definitely not headed toward a zero-person environment anytime soon," says Bill Schmitt, director of business enablement at the \$3 billion company. "There is so much to do to sort out the complexities of this connectivity that people who now do the manual processes are very valuable." The Dallas-based chemical producing unit of Celanese AG does 10 percent of its global business through its e-commerce site—ChemVIP.com—and through dedicated B2B connections, and it hopes to boost that number to 25 percent during 2002.

When Sigma-Aldrich's e-business team pitches its B2B initiatives to customers' procurement departments, it homes in on two selling points that are most important to those workers: efficiency and control. Like

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Celanese, the team promises that by ordering through Sigma-Aldrich's website, by participating in Pipeline (its private exchange) or by setting up a dedicated B2B interface, procurement employees will spend less time on repetitive tasks and will be needed to review and authorize all purchase orders before they are submitted. They are also able to see how the technology will make their job easier by giving them one source—the website—for checking what stock is in and the status of orders.

Strategy 5

HOLD THEIR HANDS

For business partners to completely and whole-heartedly adopt your e-business initiatives, you must assiduously monitor their interactions to see whether they are taking place via phone, fax, e-mail or the Web. If their e-commerce activity seems inconsistent or end users seem uncertain, you need to provide support.

Sigma-Aldrich uses business intelligence software from Cognos to track customers' buying behavior across channels. If Sigma-Aldrich's implementation manager sees that a customer used the Web to place an order once but then used the phone next time, he'll contact the customer, ask if he is having problems and offer to show him the system again. The Web customer service organization uses software from Hipbone, a vendor based in San Carlos, Calif., to take control of the customer's browser and guide him through the process. Until the customer is fully up and running on Sigma-Aldrich's website or Pipeline exchange, the company continually follows up to offer assistance. "We've learned that [adoption] requires this continual loop of reinforcement," says Johnson.

But support costs money. Panasonic Industrial's Jeanos carefully determines which partners are worth this effort based

on business volumes. Though he hasn't completely sussed out the math, he believes long-term benefits of e-business outweigh the short-term costs of providing support. "I'm not doing this at a loss. The people who are working on it are supporting other projects. This is above and beyond [their normal responsibilities]," he says.

Jeanos's IT staff helps partners with decisions on potential solutions, testing, coding and formatting data. They also tell them what technical issues they need to consider before they establish the first connection. For example, assessing what mechanisms they will use to transfer data, how they will confirm that the data moves from point A to point B, and what they'll do if the data doesn't make the connection. Panasonic's people provide support remotely, which helps keep costs down.

Reap the Rewards

Most companies are just beginning to get traction with their business partners on their B2B endeavors. But they're starting to see cost reductions and a handful, like Sigma-Aldrich, are witnessing growth in incremental revenue and significant cost savings—to the tune of \$400,000 per month in order-processing costs.

At BorgWarner, the savings are significant enough that "you can see it on the annual report in earnings per share," says Kalina. "It's significant enough that our stockholders can see improvements."

Many B2B recruiters may not be able to show astounding financial results right now, with the economy in the doldrums, but discussing e-business initiatives and enablement with business partners will prepare them for the turnaround, says Jeanos. "Right now times are bad. But when our customers are ready to begin [e-business] projects, we'll have made it easier for them to do business with us." **CIO**

What partner recruitment tactics have worked for you? Tell Senior Writer Meridith Levinson, who covers B2C e-commerce for CIO. She can be reached at mlevinson@cio.com.



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• CITY HALL •

YOU can't outsource CITY HALL

The state and local government outsourcing marketplace was supposed to explode, but we're still waiting to see a spark. It's time to devise a new plan to revitalize public sector IT.

BY TOM FIELD

Two years ago, San Diego County was supposed to be the proving ground for wholesale IT outsourcing of local and state government functions. Its seven-year, \$644 million pact with a vendor consortium led by Computer Sciences Corp. (CSC) was said to be the first wave of a flood of new public sector outsourcing deals—all of them aimed at making government faster, more efficient, more e-businesslike for everyone. As the deal unfolded, government CIOs nationwide had one eye on San Diego and the other on their own preliminary outsourcing plans. The top outsourcing vendors, fresh from Y2K, promoted the state and local government mar-

Reader ROI

- ▶ Understand why state and local government IT outsourcing is a bust
- ▶ Find out what some governments are doing as an alternative to wholesale outsourcing

ketplace as their Next Big Thing (see “High Anxiety,” at www.cio.com/printlinks).

But today, San Diego is a mess. After some initial successes, the two principal executives who struck the deal have moved elsewhere (never a good thing in an outsourcing relationship). The new day-to-day managers are embroiled in such a bitter behind-the-scenes dispute over costs, service levels and a late ERP rollout that CSC has imposed a gag order on the account, for fear of igniting a public war of words. And the lucrative state and local government outsourcing bonanza that was supposed to develop right after San

Diego's ink dried has never materialized.

CIOs who remain committed to outsourcing—but are wary of following San Diego's lead—are trying different tacks, such as breaking out smaller pieces for vendors. But by and large, across-the-board outsourcing of state and local government has become a prospect that never quite got off the ground—and, because of several intractable hurdles, it probably never will.

Even Rock Regan, the state of Connecticut CIO who has long been the poster boy for state and local government outsourcing (see “Connecticut Antes Up,” at

www.cio.com/printlinks), now says if he had the chance to outsource all over again, he'd take a very different tack. “Knowing what I know now, if we outsourced we'd do it in chunks—not all at once,” says Regan, who is the current president of the National Association of State CIOs (NASCIO). As he surveys the national landscape, Regan sees little new outsourcing activity in the public sector. He attributes part of the stall to the recession. But mostly he cites what he now sees as the fatal flaw of wholesale outsourcing in local government: too much, too soon. “Too much change, too much politics, too many battles,” he says.

CHICAGO: A Qualified Approach to Outsourcing

The Housing Authority wants competitive bids for short-term projects only. But vetting vendors is a long-term process.

WALTER SMITH, CIO OF THE CHICAGO HOUSING AUTHORITY, WANTS TO TRY something a little different. Traditionally, when cities (including Chicago in the past) outsource technology, they issue RFPs, then sign a multiyear deal with a vendor to take over an IT process.

But Smith's new approach is to issue RFQs—requests for qualifications—so that he can develop a list of prequalified vendors for any IT task imaginable. Then he can accept competitive bids on individual, short-term projects such as PC and network upgrades. “We're looking at outsourcing from a strategic sourcing perspective, rather than as a long-term solution,” Smith says. “We'll manage the vendors, but we won't hire them for long-term engagements.”

The advantage of Smith's idea: Rather than tie up city money to have vendors sitting on the bench while between projects, he pays for exactly the work that needs to be done, when it needs to be done. Smith says this move will result in an additional cost savings of 10 percent to 15 percent during the next three to five years.

The challenge, however, is doing the due diligence to prequalify vendors. He's put together a cross-functional team from his legal, finance, IT and user groups to study the marketplace and certify the vendors. But it's become an ongoing process—not a one-time deal—because new projects and new vendors keep arising.

In the first 18 months of his administration, Smith's approach has worked well enough that it's being copied by other Chicago agencies as well as public housing authorities across the country. And if the vendor community doesn't like the extra level of competition and price-cutting to stay in contention, that's just too bad. “If they want to do business with the authority, then they have to compete with other vendors,” Smith says. “With the market the way it is, we can afford to do it this way.”

—T.F.

Why Can't We All Just Get Along?

Outsourcing is a proven business strategy in the private sector, so why can't it work in City Hall?

Part of the problem, says Howard Lackow, senior vice president at The Outsourcing Institute in Jericho, N.Y., is the fundamental disconnect between big business (which wants to move fast) and municipal government (which traditionally moves slow). “Government is so archaic and cumbersome,” Lackow says. “The whole objective [of outsourcing] is to try to streamline government, but that doesn't seem to happen.”

Although outsourcing might at first seem cost-effective for CIOs and lucrative for vendors, once projects are under way both parties find themselves spending a lot more time, money and energy than expected. Just ask CSC, the \$10.5 billion IT services provider based in El Segundo, Calif., whose Pennant Alliance consortium has already exceeded its projected investments in San Diego County by about \$10 million and 300 extra people. “Government takes a lot more hand-holding, care and feeding than people expect,” Lackow says, and as a result there are fewer clients or vendors willing to take the risk.

But beyond unforeseen expenses, which can dog any IT project, public sector outsourcing poses some unique challenges—any one of which could kill a deal.

The scope of work. Frankly, state and



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local government IT is in worse shape than one might think. Because IT investments have been spotty at best in most agencies, the equipment is old, the networks are patched together, and the information silos are unbreached. It being the public sector, political turf is fiercely protected. Even though both sides in the San Diego contract did their due diligence before inking the pact, the county never really knew what it had for IT assets—much less what shape they were in. And no amount of homework prepared CSC's Pennant Alliance for the amount of work that needed to be done just to get the county's creaky infrastructure ready for upgrading. "We knew the triage work was going to be complex and difficult, but it was more than we expected," says CSC's Richard Jennings, the former project manager of the San Diego contract. To complicate matters, all the work has had to be done while maintaining high levels of public service. "We're changing the engine in a car that's moving," Jennings says.

The publicity. Even though most private sector outsourcing deals are conducted between publicly held companies, the negotiations are still held in private. Not so in government, where every bid is a public document. The government executives are used to this transparency (not that they like it), but the vendors aren't. "It's a turnoff," Lackow says. "From the vendor's perspective, even if you lose the contract, suddenly your pricing structure is public." And from the CIO's perspective...well, would you want all your dirty data aired in public?

The unions. Organized labor is rarely a great obstacle in industry anymore, but in government the unions are still powerful enough to kill an outsourcing project. That is what happened in Connecticut, where from day one CIO Regan was outgunned by two employee unions that controlled his IT staff and lobbied hard against his plans. Ultimately, Regan and the governor were the ones who made the final call, but it's safe to say that the unions had the last laugh after Regan pulled the plug on his outsourcing proposal in June 1999.

CONNECTICUT: Rebuilding a Dynasty or a Dinosaur?

When outsourcing failed, state CIO Rock Regan brought the outsourcing model in-house

SINCE THE STATE OF CONNECTICUT ABANDONED ITS OUTSOURCING INITIATIVE three years ago, CIO Rock Regan has been rebuilding his IT organization—literally. More than just arranging org charts and skill sets, Regan has had to replace his aging headquarters, which was actually condemned last year (see "Between a Rock and Hard Place," at www.cio.com/printlinks).

So now in a new facility, Regan is managing a new-look IT department—a centralized group that manages IT across all 65 of the state's different agencies. As opposed to the old decentralized approach in which the state basically had dozens of different IT departments at odds with one another over standards and purchasing, today's central IT organization deploys a standard set of technologies and services to its agency clients. "We've essentially adopted the outsourcing model, but we've become the outsourcer," Regan says. "We've become the vendor."

So far, the new group has been able to upgrade infrastructure, networks and information security across the agencies, as well as initiate some new e-government projects and a new statewide ERP rollout.

The results appear to have been mixed. A 2001 satisfaction survey by the state's Office of Policy and Management found that 72 percent of respondents labeled IT's efforts either fair or poor, with only 28 percent labeling it good or excellent. But the timing of that survey was poor, Regan says, because it fell amid the IT group's relocation. "The biggest issue we had at the time was communication [with the agencies]," he says. Since then, he believes relationships with the agencies have improved, and that a new satisfaction survey would show better results.

But no matter how much the state's IT efforts may have improved in a year, Regan still wishes traditional outsourcing had proved successful in Connecticut. Yet he also accepts the reality of his situation and limitations. "We're trying to meet our needs through other means," he says.

—T.F.

Organized labor was less of an obstacle in San Diego, where fewer IT staffers were union members. But after the deal was done, the union kept the county busy with requests for sensitive documents and even audits. "We want them to do an internal audit [of the outsourcing initiative] and prove they're good managers," says Mary Grillo, executive director of the local 2028 Service Employees International Union, which had 50 members in county IT before it was outsourced. "I think they're afraid of what they're going to find." Again, government people are used to this politicking, but the vendors find the constant tug-of-war tax-

ing. "The union does not advocate privatization of services," says Jennings, "so they want to use us as a poster child for 'don't outsource' in general."

San Diego: What Went Wrong?

San Diego started out with promise. In the first 18 months of the outsourcing deal, which kicked off in December 1999, the Pennant Alliance replaced nearly 22,000 telephones, installed 7,200 new desktop PCs, replaced the county's LAN and WAN, and relocated all the major data centers. Service levels, which had never even been measured prior to outsourcing, started

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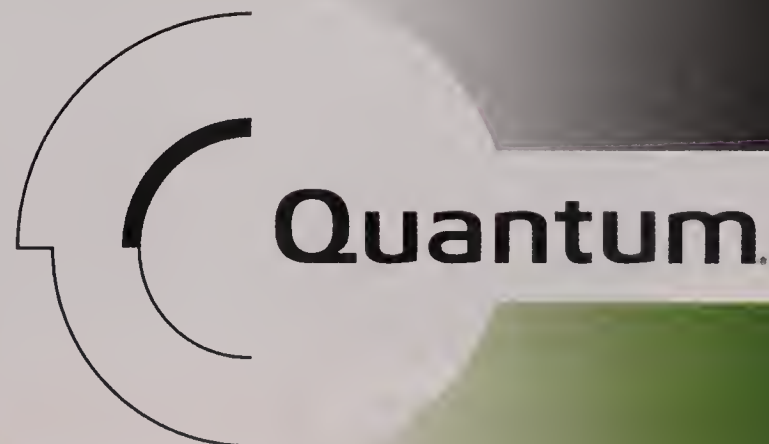
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out shaky with more outages and dissatisfied customers than anyone anticipated. But by last August, satisfaction across the board ranged from 95 percent to 100 percent.

Still, despite the high satisfaction levels, there were some major screwups in the first 18 months, the biggest being Pennant's inability to get all county employees on a common e-mail platform. The vendor paid a \$250,000 penalty for that failure—the single highest fine it's faced in San Diego, so far. In all, Pennant shelled out between \$2.1 million and \$3.5 million in penalties in 2000 (the amount depends on which side you ask) mostly for missed service levels, but nothing in 2001.

Then two things happened to send this already-rocky relationship into a spiral. First, in unrelated moves, the two principals in the deal, county CTO Tom Boardman and CSC Vice President Jennings, were reassigned in early 2001. Boardman was sent on an emergency assignment to the county district attorney's office to fix the faulty child support system. He was replaced by Lana Willingham, a 30-year county official coaxed out of retirement to temporarily manage the outsourcing team. Jennings, meanwhile, was promoted to other regional accounts and replaced by one of his deputies, Kristine Buitenhek. Typically,

changes at the top mean an outsourcing deal is in trouble, but at the time these moves seemed innocuous. Then came ERP.

ERP was to be the highlight of year two. By January 2002, CSC was scheduled to have rolled out two countywide ERP projects—PeopleSoft in HR and payroll, Oracle in finance—and then the county could start enjoying the information efficiencies that executives had promised all those months ago. But the project was taking longer than expected, and the two sides had become tangled in scope creep and disagreements over contract renegotiation. The result: a big dip in end user satisfaction and impatient saber rattling from the county—specifically from Willingham, a hardline negotiator who saw this delay as a clear example that the county wasn't getting its money's worth from CSC and the Pennant Alliance. "We negotiated service-level agreements that amount to us getting a Cadillac," Willingham says, "but we're actually getting a Volkswagen."

Frustrated by the vendors' inability to even set a new, firm deadline for the ERP rollout, Willingham withheld \$45 million in payments owed to CSC until the project's completion. Her message with this shot across the bow: Pennant should do what it signed on to do. Now. "In government, you expect everything in a service agreement to be provided," she says. "But in the private sector everything seems to be subject to constant rethinking. They must meet all the agreements, not just tell us which ones we'll get."

CSC executives, sensitive to the glass-house effect of conducting business in public, won't discuss the ERP flap, confirming only that they've slapped a gag order on all principals involved in the account, just so no one will say anything incendiary.

What next? This mess could get messier. With five years left to go in the contract, and with finances and reputations at stake, both sides have every reason to want this marriage to work. Neither would benefit from the publicity or political fallout of an outright failure. But they also have termination clauses they can invoke. If this ERP con-

MINNEAPOLIS: Once More into the Breach

Can this city's outsourcing plans succeed where others have failed? Budget deficits increase the odds.

HE KNOWS THE RISKS, BUT HE STILL WANTS TO GIVE IT A SHOT. KARL KAISER, CIO of the city of Minneapolis, is issuing an RFP to outsource "the break-and-fix business"—all the city's desktops, networks, help desk and support staff. "I've decided that 60 percent of my money and management go into that break-and-fix business," Kaiser says. "I want to refocus on becoming an information services provider rather than a maintenance organization."

He has the same compelling argument the state of Connecticut and San Diego County used to promote outsourcing: that a single vendor could beef up the city's IT infrastructure and simultaneously reduce the cost of doing business by as much as \$12.5 million over seven years.

But Kaiser also faces the same challenges that have crippled those other initiatives—changing the way government does business and selling the change to powerful labor unions. So far, Kaiser has persuaded a majority of the City Council to at least support his outsourcing RFP, which was supposed to hit the streets in April. If all goes as planned, Kaiser hopes to return to the council with a winning bid and a contract proposal in July.

The Minnesota Public Employees Association, which stands to lose 45 members (including its chapter president) through outsourcing, is bracing for a fight, however. "They're powerful—labor does have a strong influence on who's elected," Kaiser says. But he feels his business case for outsourcing is even more powerful. "The state government is in a \$2 billion deficit and is actually trying to get money back from the cities," Kaiser says. "Our timing couldn't be better."

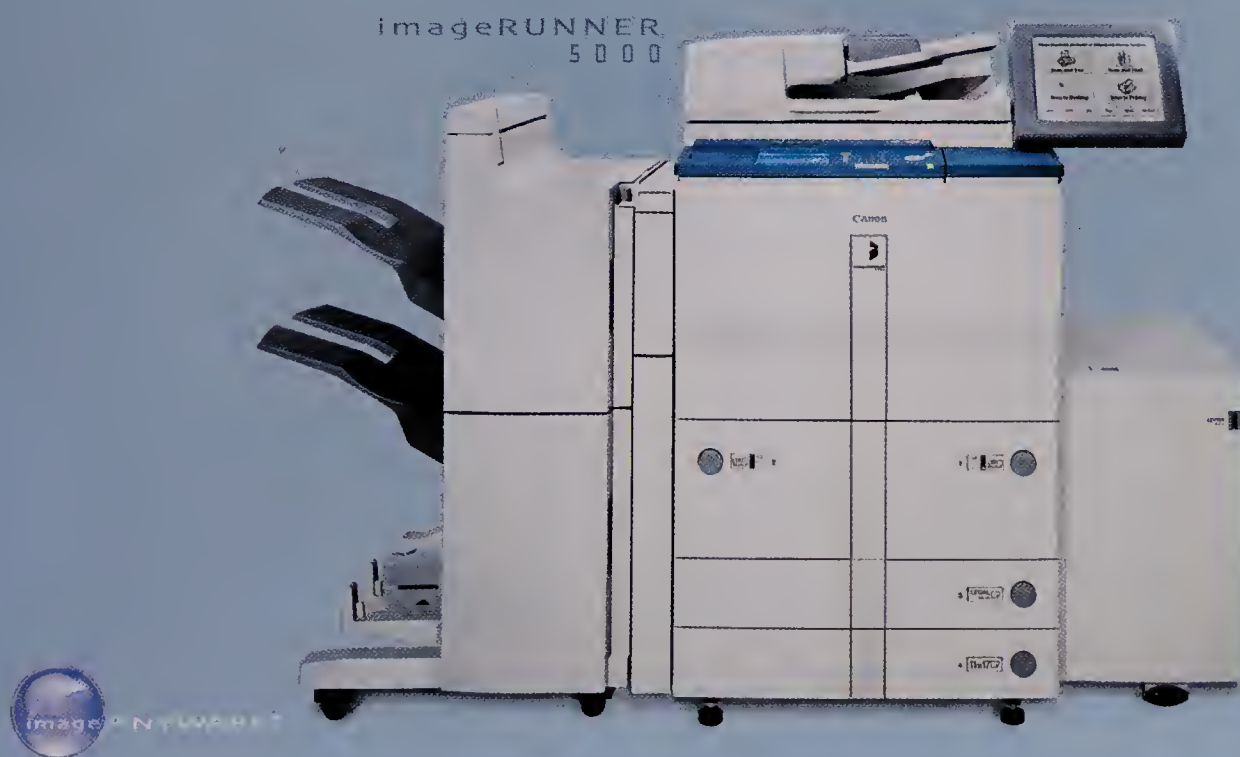
But, then, Connecticut and San Diego County felt the same way. And today they know better.

—T.F.

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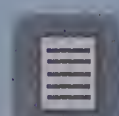


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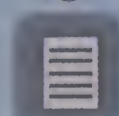
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frontation escalates, then local government's first big outsourcing marriage might well become its first big divorce.

Meanwhile, there have been more changes at the top. Willingham slipped back into retirement on April 1, to be replaced by a CTO-to-be-named-later (Boardman is staying put at the DA's office, for now). But she's not promising to stay away forever. "I have a great deal of loyalty and commitment to the county," Willingham says. "If the necessary things don't go well [with this deal], then I might just be the bad penny that keeps showing up."

Outsourcing Alternatives

So, if not wholesale outsourcing, then what? Some municipalities have done very well without outsourcing. Phoenix, for example, has won global recognition for its efforts to create a wired, Web-friendly city government—and all of the IT is in-house. The differentiator, though, is that Phoenix recognized the importance of IT decades ago, and city leaders have consistently invested in technology projects and staff. "We've never had to spend a zillion dollars to catch up," says Danny Murphy, CIO of the city of Phoenix. "Other places that haven't kept up, haven't invested, are the ones that are backed into a corner and having to play catch-up now."

A few local governments have found success in partial outsourcing. The Commonwealth of Pennsylvania, for one, has successfully outsourced its data processing functions. The Georgia Technology Authority (GTA), the state's IT agency, is circulating an RFP to outsource its telecommunications infrastructure and services. But because IT outsourcing is so new to Georgia, in mid-March the state legislature

introduced a bill to appoint a new GTA overview committee to keep a close eye on these developments. Was that shades of conflicts to come?

Some public sector organizations have devised their own unique twists on outsourcing. In Chicago, the Public Housing Authority now outsources discrete projects, not processes, to prequalified bidders (see "Chicago: A Qualified Approach to Outsourcing," Page 68). And in Connecticut, where wholesale outsourcing was rejected, CIO Regan is leading an IT transformation that's making his IT organization look and act increasingly like an outsourcing vendor. Regan has centralized IT across all 65 state agencies (see "Connecticut: Rebuilding a Dynasty or a Dinosaur?" Page 70).

Clearly, for those state and local governments that haven't yet embarked on wholesale outsourcing initiatives, there are alternatives. But a caveat for those who might ignore the warnings and explore further down the privatization path: Once you go all the way, there might be no turning back. That is the situation in San Diego. As messy as the relationship has become, the county is stuck now that it has outsourced so many people and services. The county will not buy back the IT assets it sold to Pennant or hire back all 234 outsourced employees (who now are accustomed to better salaries and benefits) because it can't maintain all the new service levels and strategies. "It'd be impossible," concedes San Diego's Boardman. "There's no way a government organization such as ours can supply the same level of service as an IT vendor."

To his credit, Boardman still thinks the San Diego and Pennant relationship can be salvaged. But even if he's proved wrong, "there's no turning back for us," he says. "We're going to outsource forever."

For better or for worse. **CIO**

Do you disagree? Can outsourcing work at the state and local government level? Share your thoughts with Leadership and Management Editor Ed Prewitt at eprewitt@cio.com. Tom Field is director of content development at CXO Media Custom Publishing.

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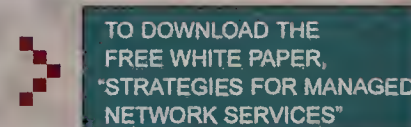
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THEY WANT



DYNAMIC DUO: Both Richard Clarke (right) and Howard Schmidt look for nonpartisan support from the U.S. Congress to help companies protect against everything from website defacements to information warfare.

FOR A SAFER INFRASTRUCTURE

Richard Clarke, President Bush's top cybersecurity adviser, and his second-in-command, Howard Schmidt, are coordinating a volunteer effort to protect the nation's critical infrastructure. Can they convince corporate America to take part?

BY SARAH D. SCALET

It's a quarter to noon on a muggy Thursday in the nation's capital, and Richard Clarke is offering milk and cookies to visitors on the 10th floor of the old Secret Service building, two blocks west of the White House. There's a simple reason for his snack choice. Earlier in the morning, Clarke (whom headline writers like to call President Bush's cybersecurity czar) hosted an event for schoolchildren about staying safe online—this decade's version of just saying no to drugs. Even so, leftover sandwich cookies seem an appropriate offering from a man whose job is to persuade bureaucrats, businesspeople and technology vendors to do two things they might not have thought about since kindergarten: share and cooperate.

It's a lofty goal—to get executives not only to tell

the federal government about attacks on their computer networks but to work with competitors to protect the country from all manner of electronic threats, from website defacements to information warfare. But that's why President Bush recruited Clarke last October as chairman of the newly created Critical Infrastructure Protection Board, now part of the Office of Homeland Defense. And it's why in February, Clarke got Howard Schmidt, then chief security officer of Microsoft, to become vice chairman of the board.

Despite the duo's high profile, it wouldn't take a pessimist to call theirs an impossible task. Thus far, their work has had a dogged Washington flair—hold meetings, issue reports, beg Congress for attention and most important, recruit volunteers. One way to

improve critical infrastructure protection would be for Clarke and Schmidt to advocate legislation that would give them a hammer to force companies to work with the government and report information about attacks. But the two have been staunch opponents of such legislation. "We don't want to regulate because we don't think we do it very well," says Clarke, age 51, who made his name as President Clinton's counterterrorism adviser for most of the 1990s and is the political counterweight to Schmidt, age 52, whose sympathies lie more with the private sector and vendor community. The process of improving security "works better if people think they're doing it in their own best interest," Clarke says.

To hear Clarke and Schmidt tell it, people are joining the fight in their own best interest, and any perceived reluctance on the part of corporate America is merely a marketing problem. The duo make themselves out to be patriots as well as consummate political insiders—Schmidt with the obligatory American flag pin on the lapel of a jacket draped

houses didn't have locks, would you hire more police or buy more locks? Criminal justice plays a very important role here, especially in terms of deterrence. We have to arrest people and prosecute them in order to deter others. But fundamentally, cyberspace security is about buying and using door locks.

Howard Schmidt: Imagine there's a failure of a locking assembly, which results in a break-in, which results in a report to a law



public.] Why is the exemption so important?

Clarke: The Nimda virus last November was a major attack that caused billions of dollars worth of losses in the private sector, yet not one company called us up to tell us they had been attacked because they wanted to be able to keep it secret. They don't want customers and stockholders to lose confidence. We understand that. But as a result, we have an inadequate perception of what's going on in the American information infrastructure.

Sen. Robert Bennett [R-Utah] probably puts it best when he says, Imagine you are a commander in charge of a battlefield, and you could only see or know 15 percent of what was going on in that battlefield. How would you defend yourself? Well, if you look at our critical infrastructure, about 85 percent of it is in the private sector, and unless we can have some knowledge as to what's going on there—like attacks, viruses, worms, denial-of-service attacks—then we'll never be able to help defend it. Only by getting a Freedom of Information Act exemption, narrowly written, will we ever be able

If you discovered break-ins in your town but most of the houses didn't have locks, would you hire more police or buy more locks?

—Richard Clarke

over his chair, Clarke sipping from a blue and gold coffee mug from the White House Situation Room. But as much as anything, they are the chief publicists of a vision for improved cybersecurity around the world. CIO caught up with them for an interview about how far critical infrastructure protection has—and hasn't—come since Sept. 11, and how they're trying to coax corporate and vendor leaders into playing a greater role.

CIO: A recent survey shows fewer companies reporting cybercrimes than a year ago. Does that affect your mission?

Richard Clarke: We don't think about [critical infrastructure protection] primarily as a criminal justice problem. If you discovered break-ins in your town but most of the

enforcement agency, which results in an investigation. You could have one track from that investigation directed toward the criminal justice system; the other track goes to [us, and we ask], "How could this have been prevented?" We have a constant feedback loop, which means eventually we have better security on the front end and the law enforcement authorities have less to investigate.

You've said that the Freedom of Information Act [FOIA] exemption is the single most important policy change to improve information security. [Note: This controversial exemption—debated in Congress and advocated by many CIOs—would ensure information given to the the federal government about computer attacks would not be made

to persuade companies that they can trust us, the government, with information about vulnerabilities or about hacks.

I've heard you aren't so sure the exemption is necessary; it's more that businesses think it's necessary. Are you offering it to corporate America as sort of a contract: Trust us, and we'll help you out?

Clarke: No, not really. We've looked at the legal question: Are there already adequate provisions in the law that would exempt this kind of information from a Freedom of Information Act request? Our lawyers say the law, as currently written, would allow us to protect that information. But that doesn't persuade companies to give us the information. Their lawyers believe they need



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Security Q&A

additional protection; therefore we need to get additional protection.

If the law passes, will there be an onslaught of people reporting information to you?

Schmidt: It's hard to tell. We think we'll have some companies come forth right away. In other cases, there'll still be some hesitation, some guarded discussions. I'm sure there'll be a little bit of giving of information, seeing how that plays out. I don't think it's going to suddenly open the floodgates.

One line in the executive order creating the Critical Infrastructure Protection Board says, "Implementation of this policy shall include a voluntary public-private partnership, involving corporate and nongovernmental organizations." So in a way, your job is to force people to volunteer. How?

Clarke: The Partnership for Critical Infrastructure Security [PCIS] was formed two years ago. We've had six or seven industry groups form Information Sharing and Assessment Centers [ISACs] before 9/11. So I'm not concerned that people won't cooperate. But this is more than just patriotism. It's economic self-preservation. Many companies participating in this partnership on a voluntary basis realize that they're doing it because they can only grow if IT grows, if IT is secure. For us really to go to the next stage of IT in the workplace—IT in the home—we really need to increase consumer confidence.

Schmidt: When the PCIS was formed, I was in the private sector, and [security] was not an issue in many companies. You worried about earnings per share, shareholder value and so on. Dick [Clarke], John Tritak [director of the Commerce Department's Critical Infrastructure Assurance Office] and the folks in the government at that time provided a forum for us to become more aware of the government's interest in the area of critical

infrastructure protection. It was natural to pull everybody in and say, "Listen, this is important to the president. We want you to help us." Who would *not* want to answer that call? You'll see the momentum that we've got today, where people are literally calling up and saying, "What can we do?" It's based on the trust that was developed by the government initially reaching out to companies saying, "We're not here to regulate you or ruin your business model. We want what's good for the country, for all of us."

It sounds like you're talking about this volunteerism as a substitute for regulation.

Clarke: We don't want to regulate because we don't think we do it very well. We'd like voluntary cooperation, voluntary adoption of best practices, voluntary sharing of information, because it works better if people think they're doing it in their own best interest, rather than if they think they're doing it because they have to.

It's a marketing job as much as anything?

Clarke: About half our job is marketing.

What's the other half?

[They both laugh.] **Clarke:** A lot of what we do is make priorities—budgetary, legislative, priorities in terms of what parts of the infrastructure we work with the most. What are the most important things to fix? Imagine the intersection of where the vulnerabilities are highest and where the effect of failure is the highest. That's what we're trying to find.

If you look at the state of critical infrastructure on Sept. 10 versus now, have there been measurable improvements?

Clarke: The federal government is getting more secure in its cyberspace networks. The budget the president sent to Congress in February asks for a 64 percent increase in funding to defend federal departments and agencies—that's more than 8 percent of the federal IT budget spent on IT security. We're trying to do two things with that [funding increase]. Obviously we're trying to fix very serious problems that the federal depart-

ments have. And two, we're trying to set a model for the private sector—for members of corporate boards of directors, for CEOs, saying, "Gee, the federal government is spending 8 percent of its IT budget on IT security. What are we doing at our company?" Unfortunately, most companies are not going to be able to say that they're spending anywhere near 8 percent on security.

You like to quote a report that most companies spend more on coffee than on security. Is 8 percent for catch-up? Is it enough?

Clarke: It's catch-up for the federal government, and it won't be enough if we don't sustain it at that level or perhaps even slightly higher over several years. There's no good figure that is appropriate for every company or every institution. That's why we're not saying 8 percent is the target.

Are you advocating any kind of tax benefits for spending on security?

Clarke: No, I think there's enough benefit inherent for spending on security that we don't need to give people a tax break. The benefit comes from being secure. It's more expensive in the long run to be insecure.

Don't you think that's a hard sell to CFOs?

Schmidt: Not at all. When the Melissa virus hit at one company that I have some very great insight into, it took about \$14 million dollars to bring that whole system up online after 10 days. When the Anna Kornikova virus hit the same company, they were able to contain it within 30 minutes with better processes, and that 30 minutes translated into about \$12,000 worth of effort—quite a difference. CFOs are saying, "It's going to cost me just like anything else to do some risk management on the front end, but in the long term I'm going to be much more able to save money and reduce total cost of ownership."

Are you saying that viruses and worms actually helped as far as demonstrating that ROI?

Clarke: I think that there's a silver lining to some of these viruses and worms, because

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you know when you get hit. People are penetrating networks, doing espionage, and we don't know it because they're successful. They're not leaving traces. It's helpful when we have major viruses and worms and denial-of-service attacks because they're noisy and they leave fingerprints, and we know it's out there. People are then motivated to fix it.

How can you convince vendors to create more secure products?

Clarke: The vendors tell us, "We could create more secure products, but no one wants them." Then we talk to the procurement people—in banking, finance, energy, government—and say, "Do you want more secure products?" And they say, "Yes! But the vendors won't make them." It's what I call a "dialogue of the deaf." We try to bridge it by taking the critical infrastructure procurement people and the vendors by the hand and saying, "Vendors, could you make a more secure product?"—"Critical infrastructure companies, do you want a more secure product?"—

One is holding vendors accountable, one is doing [something about] it in court. We're in favor of holding vendors accountable. When a product fails, the vendor has a responsibility to quickly identify a way of fixing it and getting that patch out, and the patch not only should fix the problem, it should not interact badly with other widely utilized applications. But we don't think it's terribly valuable to litigate such problems. We'd like to try to



"We're not here to ruin your business model. We want what's good for all of us."

—Howard Schmidt

"Now, can both agree that we're going to have more secure products?" There's actually a real role for us to bring people together to have dialogues that you would think naturally occur but don't.

We also have a sort of honeybee role where we fly around flower to flower proliferating the message and sharing information. We're able to learn what products are out there. We don't recommend certain brands, but we do recommend certain kinds of services.

What's the administration's position on holding vendors accountable for products that aren't secure? And liability for products that aren't secure?

Clarke: I think they're two separate issues.

find solutions that are quicker than long, multiyear litigation.

We spend a lot of time worrying about patches, but we don't want to just put band-aids on the current generation of systems. We want to think about what the next generation of systems should look like.

What would be the signs that things were getting better?

Clarke: It's mostly anecdotal. You can look at the number of computer incidents; you can look at the dollar value of damage done by such incidents. Unfortunately the numbers are skyrocketing. That doesn't mean we're not making progress. If you look at traditional measures of effectiveness—the number of incidents and how bad they are—

it would tell you we're getting worse. The number of people and functions connected to the Internet is going up, and the sophistication of the attack tools is increasing. At the same time, we are getting the awareness message out, getting more CEOs to care, getting spending in security in the public and private sectors, getting the hardware and software manufacturers to develop more secure systems.

Then there's the unknown unknown. Have our enemies already penetrated our critical infrastructure successfully and we don't know it? Or are they in a position where, if there is a big conflict between us and them, they are already in a position to disable our critical infrastructure?

Who's the "them"?

Clarke: We've stopped asking that question. Before Sept. 11, people tended to think in terms of a threat paradigm: Who's the them, and when are they going to do it? They waited for that information before they acted. So, tell me the name of the terrorist group, what airplane they're going to hijack, what city they're going to attack. Tell me when it's going to occur, and then I'll do something to prevent it. We learned you don't always get the information—the attack just occurs.

So we're advocating instead a vulnerability paradigm that says, Don't worry about who's going to do it. Don't worry about when it's going to occur. Ask yourself what your vulnerabilities are. And then find that intersection between the things that are the most vulnerable and the things that would be the most damaging. It's a shift from who's going to do it, when and where, to where are my weaknesses, and what are the most important weaknesses that I have?

People who are not now actively our enemy may be actively our enemy three years from now, five years from now. If all we do is collect intelligence about people we think are our enemies, we may miss what we should be doing. **CIO**

Sarah D. Scalet, security editor and senior writer for CIO, can be reached at sscalet@cio.com.

THE SECURITY REVOLUTION

Creating a Culture of Security

PEOPLE, NOT FIREWALLS, ARE YOUR COMPANY'S FIRST LINE OF DEFENSE

There's nothing that gets people's attention like handing them a crisp \$100 bill.

That's how William Hugh Murray remembers a colleague rewarding an employee who followed the corporate security policy and challenged Murray's friend for strolling around the building without his required security badge. "People start asking other people about their badges, and the wearing of badges gets good really quick," chuckles Murray, a Certified Information Systems Security Professional (CISSP), consultant with TruSecure Corp. in Herndon, Va., and Corporate Secretary of (ISC)², the International Information Systems Security Certification Consortium, a non-profit security training and standards organization based in Framingham, Mass.

That's an example of the kind of creative, consistent reinforcement necessary to forge a culture of security — a work environment in which employees at all levels understand and commit to the need to protect the enterprise not just from physical security breaches, but also virtual intrusions from hackers or viruses. More than just a cost of doing business in the post-9/11 world, creating a culture of security can actually boost productivity and profits by reducing downtime and system outages, says Hal Tipton, CISSP and former president of (ISC)².

But to achieve these business benefits, senior executives must foster awareness of security risks through education, training and consistent enforcement of proper policies. Everyone from the CEO to the accounts payable clerk must commit to following proper security practices.

DEFINING YOUR CULTURE

Creating a culture of security is no different than creating a "culture of quality" or a "culture of customer service." The initiative can come from anywhere in the organization — in this case, likely the

CIO or Chief Security Officer. But senior management — whoever has the authority to administer recognition and rewards — must promote the change by consistently communicating the business implications of security, and enforcing security policies. At each step in the management hierarchy, says (ISC)²'s Murray, supervisors must evaluate and reward those who report to them based on their adherence to good security practices.

And there's no room for breakdowns. If an employee goes to a manager to report a security lapse and is brushed off, that staffer won't speak up again. Similarly, if management preaches the importance of passwords but then casually hands out the same temporary password to every new employee, "The immediate message is that management doesn't take this very seriously," Murray says.

"MAKING CHANGES IN ANY ENVIRONMENT NEEDS TO BE INCREMENTAL, AND IT NEEDS TO BE DONE CONTINUOUSLY. YOU CAN'T JUST HAVE A SECURITY AWARENESS PROGRAM THAT RUNS FOR TWO MONTHS."

— JOHN COLLEY, VP/DIRECTOR (ISC)²

The need for top-down leadership — and to ensure security spending is focused on the most critical risks — is reflected in the rise of chief security officers (CSOs). These new executives boost efficiency and security effectiveness by coordinating security efforts across the organization, managing outsourcing contracts and mapping security measures to real business risks, says Steve Hunt, a Vice President at Giga Information Group in Chicago. He knows of about 80 CSOs who report to the CIO level or higher and who coordinate security across all types and sizes of businesses. Hunt expects companies to increase spending on security software by 5 percent this year. "However, in 2002 proportionally more money is being spent on management personnel than in previous years, as part of an effort to ensure security spending delivers business benefit. The move to CSOs is part of this trend, and is working," Hunt says.



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DOING DUE DILIGENCE

BASIC STEPS TOWARD CREATING A CULTURE OF SECURITY IN YOUR ORGANIZATION

- **Identify who is responsible** for designing and implementing your information security policy.
- **Communicate** that policy with on-going awareness and training programs; establish clear expectations for managers and employees.
- **Create and test** a business continuity program to ensure survival of critical data, equipment, and networks and to keep valuable employees.
- **Identify and control** critical systems with password management, installation of security patches and fixes of common vulnerabilities. Links to external networks may require encryption, firewalls, authentication and/or intrusion detection systems.
- **Stay vigilant** with security reviews, audits, and vulnerability assessments. Monitor vendors and the Web to stay current on latest threats.
- **Make sure** the board of directors and corporate officers annually review the status and outlook of your information security program.
- **Provide adequate training** and encourage certification of your security staff.

Source: (ISC)²

REMINDERS AND REINFORCEMENTS

Micki Krause, Director of Information Security at a healthcare company on the West Coast, recently saw firsthand how easily security breaches can occur. She hired outside auditors to test her company's security awareness, and the auditors had a few concerns. In one case, auditors found staff members testing a new system had accidentally exposed the network to outside hacks. In another, auditors posing as support staff were able to get 16 of 22 employees to reveal their user IDs and passwords.

Subsequently, Krause plugged the holes in her organization's security procedures — and just as importantly, she also rewarded the six employees who refused to disclose their IDs and passwords to the fake "support staff." But her experience illustrates that even with top-down awareness, creating a culture change doesn't happen overnight. "Making changes in any environment needs to be incremental, and it needs to be done continuously," says John Colley,

a London-based Vice President and member of the board of directors of (ISC)². "You can't just have a security awareness program that runs for two months."

Giga's Hunt recommends an ongoing security-awareness process that includes:

- Identifying critical information assets and risks
- Crafting a security policy
- Implementing, administering and auditing the policy
- Continually reassessing risks.

To ensure a culture of security, security proponents and managers may also have to change some of their own behavior. Too often they get discouraged after a security proposal is rejected by senior management because the risk may not be enough to justify the cost. "You've got to understand 'no' is a perfectly appropriate answer," says Murray, especially since budget conditions, or management's perception of the risk, are subject to change. Department managers who have a budget all got it the same way — "They asked for it and got told 'no' a lot," he says. As long as the risk and cost are explained, it's up to the business managers to decide whether the cost of the security plan is too high. But Murray feels it is up to him to keep raising security concerns so business managers can decide how much to spend to reduce their risks.

Most companies aren't doing enough to create a culture of security, says Bruce Murphy, CISSP and CEO of Vigilix, Inc., a provider of managed security services, consulting and security related information in Parsippany, N.J. "They don't understand the value, since it is hard to quantify" the hard-dollar return on security spending. Many companies also underestimate the importance of people and processes in creating a culture of security, he says.

Krause concurs, saying creating a culture of security involves communication, rewards and incentives. "In fact, security is not just technology, it's really people and processes." ■

The Big Picture

INFORMATION SECURITY PROBLEMS ARE GLOBAL, BUT SOME REGIONAL SOLUTIONS ARE UNIQUE

Among the greatest security challenges now facing senior executives worldwide are:

- The increasing sophistication of network security threats, and the speed at which they change.
- The ongoing need to educate staff about the importance of information security.

And although some nations and agencies are crafting unique local solutions, studies show that most businesses are not doing enough to overcome these common global problems.

Among recent research findings:

- **Senior Leaders Recognize the Threat.** In a fall 2001 survey of 459 CIOs and business managers, Ernst & Young found that 70 percent of respondents cited ever-changing and increasingly sophisticated security threats as their top concern. Employee awareness of security threats was the number two challenge, cited by 66 percent of the respondents.

- **Most Companies Aren't Doing Enough to Fight Back.** In a sum-

WHY SPEND ON SECURITY?

HOW TO JUSTIFY COSTS AND SHOW BENEFITS

Potential costs of lax security:

- Lost sales due to system downtime
- Loss of proprietary customer or product information
- Drop in stock price due to security breach
- Shareholder lawsuits over lax security
- Customer lawsuits over loss of privacy
- Regulatory penalties

mer 2001 survey conducted by CIO Magazine and Cambridge-Mass.-based digital security firm @stake, two-thirds of respondents said they did not have a well-defined company-wide security policy or plan.

Faced with this disconnect between awareness and response to global security threats, organizations such as the International Organization for Standardization (ISO) and (ISC)² are working to create new international security standards. The European Commission has even unveiled a plan that would send hackers and writers of computer viruses to jail for years.

But just as vital as policy-making is education — making global business leaders aware of the risk of embarrassing and costly security breaches, as well as potential shareholder lawsuits that could hold senior management personally responsible for such breaches.

SAFEGUARDING PRIVATE DATA

Intrusions and viruses aren't the only issues on the minds of global business leaders. Regional privacy laws are also a concern — and they vary by nation. In the U.S., for example, the Health Insurance Portability and Accountability Act (HIPAA) prescribes strict standards for how healthcare providers must protect patient information. But other privacy standards are less clearly defined in the U.S. and elsewhere, and inconsistently enforced from country to country. The only way to stay on top of and within these standards, global security experts say, is for companies to designate staff in

each of their global marketplaces to understand individual countries' rules and ways of doing business so processes can be adapted to meet those local requirements.

Some examples of regional variances: some European countries have different definitions for what constitutes a legally acceptable digital signature for an online transaction. And while the European Union's Data Privacy Directive prevents the collection of most personal data unless the consumer authorizes it, the laws that define "informed consent" vary widely from country to country, says John Colley, Vice President of (ISC)³, in London. "What may be perfectly legal in the [United Kingdom] may be illegal in Germany, or vice versa," he says.

Enforcement can also vary across global regions. For example, while Hong Kong has adopted an ordinance similar to the EU's privacy directive, it relies on companies to police themselves rather than on the stricter government enforcement found in Europe.

To cope with the differing global requirements, many companies that do business both in America and in Europe have established "safe harbors" in which they promise to safeguard private data about EU consumers under the laws that apply in those consumers' countries. But rather than using technology to provide special safeguards, says Colley, the safe harbors are usually "legal constructs more than anything else, based on trust and business expediency" between trading partners.

LEADING THE CHARGE

Mindful of global security threats — and the diversity of regional solutions being deployed against them — several international agencies are at work on various information security standards.

The International Standards Organization (ISO) in December 2000 released its ISO 17799, which it calls "a comprehensive set of controls comprising best practices in information security." The 10 CISSP domains, which are closely related

to the ISO control areas, include:

- Access Control Systems and Methodology
- Applications and Systems Development Security
- Business Continuity Planning (BCP) & Disaster Recovery Planning (DRP)
- Cryptography
- Law, Investigations & Ethics
- Operations Security
- Physical Security
- Security Architecture and Models
- Security Management Practices
- Telecommunications and Network Security

Clearly, there is no single solution to eliminate the global security threat, but increased awareness and action will minimize risk. ■

ALIGNING SECURITY AND BUSINESS

10 QUESTIONS TO ASK YOURSELF ABOUT SECURITY:

1. Does your board of directors recognize that information security is a board-level issue that cannot be left to IT alone?
2. Is there clear accountability for information security in your organization?
3. Can your board members articulate an agreed set of threats and critical assets? How often do you review and update this?
4. Do you know how much is spent on information security and what it is being spent on?
5. What would be the impact on the organization of a serious security incident?
6. Does your organization see information security as an enabler? (For example, by implementing effective security, could you enable your organization to increase business over the Internet?)
7. Has your business assessed the risk of getting a reputation for slackness in security?
8. What steps have you taken to ensure that third parties will not compromise the security of your organization?
9. How do you obtain independent assurance that information security is managed effectively in your organization?
10. How do you measure the effectiveness of your information security activities?

Source: Ernst & Young

Potential benefits of strong security:

- Increased sales and productivity
- Tighter integration with customers, suppliers
- Increased customer loyalty
- Competitive advantage over less secure competitors
- Lower premiums on "hacker" insurance

Source: Strategic Directions

The ROI of Certification

SECURITY CERTIFICATION ISN'T JUST A COST; IT'S AN INVESTMENT

An hour a day, seven days a week, for nine months. That's the time commitment made by Chuck Bianco, a 17-year security veteran, in preparation for his Certified Information Systems Security Professional (CISSP) certification in November 2001. "I'm as proud of that certification as anything else I've done in business," says Bianco, Manager of IT Examinations for the U.S. Treasury Dept. in Dallas. But more than just new credentials and personal pride, this cer-

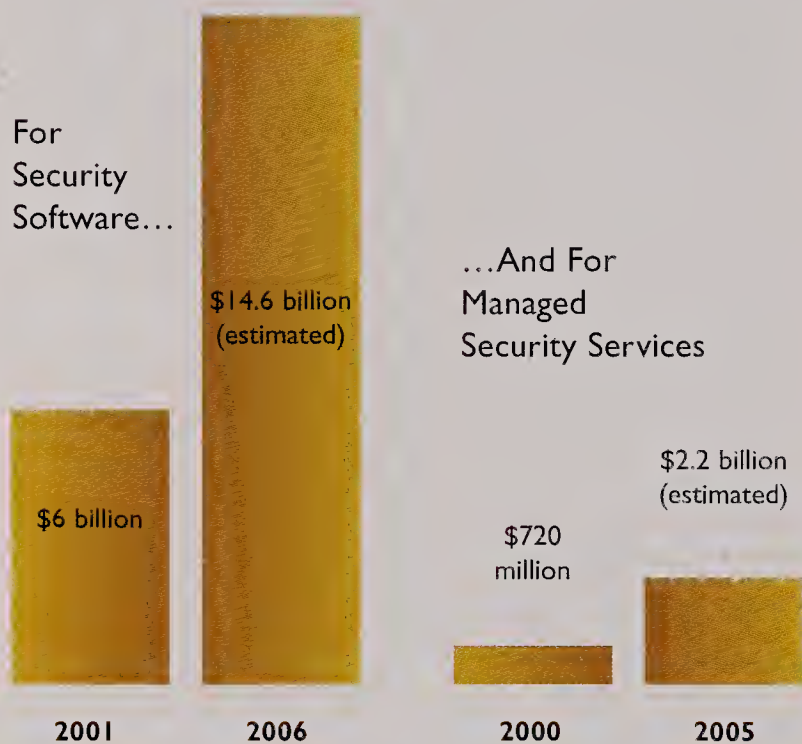
and systems. And although certified security personnel do cost more money, the ROI is pretty clear, experts say. "You're buying protection in case of a shareholder lawsuit resulting from a security problem," says David Foote, President and Chief Research Officer at research and consulting firm Foote Partners in New Canaan, Conn. Boards of directors are getting involved, and they realize a high-profile Web breach, or a privacy breach, could harm the reputation of a company and impact revenues," Foote says. "By saying you have the CISSP on staff, you can show you took prudent and reasonable precautions — you did the best you could," Foote says.

line study guides for its certification exams.

More than showing off the proper skill, security certification tells an employer a security professional is truly knowledgeable and experienced in the field, rather than someone who has just read some books and can use the proper buzz words, says Tipton, who is now a Security Instructor and Administrator of security training programs.

Employing certified security professionals also helps protect senior management, which can be held personally liable if they fail to take proper security precautions required by law, he says.

WORLDWIDE SECURITY SPENDING ON THE RISE



Source: International Data Corp.

tification has given Bianco a strategic new position at a key time in his enterprise's battle against information security threats.

People such as Bianco are a hot commodity these days. In an increasingly security-conscious world, CIOs need professionals like Bianco who have the certified skills to secure corporate data

The CISSP certification is granted by the International Information Systems Security Certification Consortium (ISC)², a non-profit security association in Framingham, Mass. The certification is "like a badge of honor" that promises its holder can be trusted, says Victor Keong, a partner in the Security Services Practice of Deloitte & Touche in Ontario, Canada. "When we do security consulting, the customer's prime concern is 'are my secrets safe?'" Certification can help assure them the security professional they hire is not himself a hacker, he says.

Along with three years of practical experience, CISSP exam applicants need in-depth knowledge of the 10 domains within (ISC)²'s Common Body of Knowledge (CBK). The CBK is a central, standard list of key security knowledge. Domains within the Common Body of Knowledge include security architecture and models, cryptography, operations security, access control systems, and law and ethics. Hal Tipton, a former (ISC)² president, describes the CBK as the topics a security professional "needs to know enough about so they can carry on an intelligent conversation with their peers."

(ISC)² also offers review courses and on-

"Top management doesn't have the time to really study all these things and understand what the requirements are," Tipton says. "That should be up to the qualified security people on their staff, and certification is a way of being assured they are properly qualified." ■

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THE SUCCESS OF ANY I.T. OR BUSINESS INITIATIVE relies on our ability to build strategic partnerships with corporate and business unit management, key suppliers, vendors and customers. That success will only come when many different voices embrace shared visions. To get there, we need solid strategies, clear prioritization, understanding and buy-in—along with the right infrastructure and resources in place. Join us as your CIO peers share visions on ways to create new business value, a higher ROI and more strategic deployment of technology.

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As CIO of Humana, Bruce Goodman has played a central role in creating customized health care for his company's 6.4 million members.

CIOs at the

For good or ill, CIOs are reshaping the way health care is delivered in America

Reader ROI

- ▶ Learn why CIOs are involved in fixing health care
- ▶ Find out how technology is helping to replace managed care with new kinds of insurance
- ▶ Understand the ethical dilemmas these CIOs must deal with

BY SCOTT BERINATO

Heart of Health-Care Change

Six months into his job as CIO at Humana, one of the nation's largest health insurers, Bruce Goodman was called into a meeting with the company's top executives. It was at this meeting that Goodman realized he had struck gold with his new job. Humana, which

insures about 6.4 million people in 18 states, was forming a committee to "envision a new business model" for health care. Managed care had failed, and it was time to replace it.

In Hollywood, such an overhaul requires Denzel Washington to hold a hospital hostage. In real life, fixing health care requires something else entirely—the CIO. Goodman had not been invited to the meeting to play a supporting role. And neither had IT. In the bid to cure health care's woes, IT is the new business model.

At its heart, the new approach relies on CRM technology to customize health plans for consumers. Insurers use Web-enabled software to profile individuals' medical spending needs and then put them into different plans. Under the new plans, instead of having money taken out of their paychecks, employees accept a high deductible or allowance, say, \$2,000 or \$3,000 per year, out of which they pay for their own health care. If expenses are incurred after the allowance is burned, the insured will

have to pay for the additional care but only up to a certain cap, say \$5,000. After that point, health care is covered under the old managed care model.

Consumers can choose what kind of plan they want and how much they intend to spend for it. For instance, someone who is healthy and doesn't need expensive medications would be steered to a less expensive plan with a lower allowance, while an individual with a chronic condition who requires specialized care and medicine would need a more expensive plan.

Theoretically, this health-care model will make employees better consumers. They'll try to get the best care for their dollar. At the same time it will reduce cost for the employers and insurers, as many healthy people are overinsured. Because of the potential to contain cost, most of the nation's largest health insurers, including Aetna, Cigna, Humana and the United-

Health Group have either rolled out a version of this new model or expect to do so this year. A number of startup companies are also competing in this space.

"We're changing, revolutionizing health care, and technology will get us there," says Goodman, who came to the Louisville, Ky.-based insurer in June 1999. "Managed care is not doing what it needs to. These [new types of health insurance] will make it go away."

But while the IT-driven model does offer a way out of the health-care swamp, it also introduces profound ethical issues. Critics of the new approach raise the specter of rationing, saying it will shift the high cost of medical care to the sick and the poor.

"Whenever you substitute savings for insurance, a question of rationing comes up," says Deborah Chollet, a health-care policy expert at think tank Mathematica Policy Research in Washington, D.C. "We're going toward a system where the wealthy and healthy can opt out of the problems."

If CIOs such as Goodman are using CRM to empower this revolution, as they will tell you they are, then they had better be prepared

HMO RIP

Health insurance started in the United States as a simple fee-for-service business. You received care and the doctor charged a fee that the insurance company paid. By the mid-1980s, that approach was generating annual double-digit cost increases. Managed care was meant to straighten out the mess. Insurers kept cost down by organizing exclusive networks and

deciding how much to reimburse doctors and hospitals for procedures. If the provider didn't agree to the new rates, the insurer denied access to its insurance network and the patients who used that network. In a reasonably short time, the health maintenance organization was king.

But not for long. Patients rebelled against being limited in their choice of physicians and hospitals. And doctors and hospitals banded together to demand better reimbursement rates. The HMOs had to listen because their patient population insisted on having those doctors in their network. Patients also insisted on access to expensive new drugs and treatments.

By 2000, health-care costs had exploded again. Trying to control cost seemed like pressing on a balloon. Push down in one spot and cost bulged out in another. To stabilize cost, health insurers have now latched

**"Managed care
is not doing what
it needs to.
These new plans will
make it go away."**

-BRUCE GOODMAN, CIO OF HUMANA

Under Goodman's direction, Humana has built an online tool that creates health plans tailored to its members' individual medical needs.

to understand and respond to its social implications. And what they learn in the process—about implementing the technology and managing its use—goes well beyond health care. Other industries, from financial services to retail, are also exploiting CRM to profile customers and develop customized products. The best practices developed in health care will be of value to CIOs in those sectors as well.

"The role of the CIO is much more critical now," says Ken Linde, the CEO of Destiny Health in Bethesda, Md., a subsidiary of South Africa's Discovery Health company that offers health insurance under the new model. "This consumer-driven area relies so heavily on information that the CIO becomes one of the most critical positions in the company."



PHOTO BY JOE HARRISON



How often do you use prescription drugs? How often do you visit a physician? Would you be willing to use generic drugs? Would you want to see a doctor at a teaching hospital? Do you have any chronic conditions? After answering dozens of questions, SmartSelect's software builds several health plans with 42 possible combinations, each

David Goltz, CFO and interim CIO of Destiny Health, has built an online calculator that helps people estimate how much they will need in their health plan account.

offering differing levels and areas of coverage. The program tells users what their yearly allowance should be so that they won't put too much or too little aside. The CRM engine presents the employees with several options: They can choose any plan, but the tool is meant to help them understand which is the best fit based on their health-care needs.

INTERACTIVE CONSUMER TOOLS

Until now, consumers largely have been kept in the dark about health-care cost. These new plans bring them into the loop. "Ask anyone how much their prescriptions cost, and they'll tell you \$10," says Deborah Casurella, CIO of Definity Health, a St. Louis Park, Minn.-based startup that offers customization tools. "They have no idea the drugs cost hundreds of dollars or that a physical is \$350."

To inform consumers, the CIOs have created interactive tools. In Casurella's case, one of the most effective has been a prescription management tool that went live in January. In addition to letting consumers track their prescriptions on a calendar (how many drugs they're using, when they fill them and so forth), the tool also helps them compare generics with brand-name drugs. "They can slice the data many ways. We've found it's a very quick learning curve," Casurella explains. Goodman created a similar prescription tool now available to all of Humana's members.

At Destiny Health, which offers a savings-account-like plan to almost 300

on to the customized health plan approach with CRM technology as its linchpin.

Though each insurance company has its own way of architecting the system, all of them follow a similar pattern. There are four basic pieces of CRM that CIOs are using as a framework for building the new insurance plans.

CUSTOMIZATION

Medical allowance plans will fail if health insurers don't help consumers understand how big their allowance—which is usually stored in an interest-bearing savings account—should be. If the allowances are too high, consumers will set aside more money than they need to. Since the money can't be used for anything but health care, that's wasted money. If the account's too small, consumers will have to pay additional cost out of pocket, and insurers will end up managing the care as they do now.

"We're looking at the radical free marketization of health insurance."

—DAVID GOLTZ, CFO AND INTERIM CIO, DESTINY HEALTH

Under Goodman's direction, Humana launched a limited digital health plan called EmpheSys last October. Just last month, the company rolled out SmartSelect, a more advanced customized health plan for its more than 14,000 employees. That product will be sold to other employers this year.

With SmartSelect, employees go to a website and are asked a series of questions:

Illinois-based employers, CFO and Interim CIO David W. Goltz has built a cost calculator to help employees estimate how much to put in their Personal Medical Fund, or PMF. Consumers estimate the number of doctor visits, medical procedures and drug purchases they anticipate in the coming year, and the calculator calculates their expected expenses. It also spits out how much consumers should put in their savings account. Much like financial investors, health-care consumers will be able to manage their entire portfolio online, doing such tasks as checking prescriptions, requesting and receiving reimbursements electronically, changing addresses or adding dependents.

WEB CONTENT

Web content is a prerequisite for all these new CRM-based plans. Consumers like accessing health information online. In fact, more Americans go online to do health research than to hunt for stock quotes, check sports news or shop, according to a recent survey from the Pew Internet &

American Life Project.

Casurella works hard at creating a consistent look and feel to her site's content, which comes from all over the Web. Goltz says he puts time into translating content from the jargony insurance industry into terms consumers understand. Goodman's vision for Web content is for customers to be able to access patient reviews of doctors, a concept not that different from what's done with books on Amazon.com.

All of this is secondary in importance to the credibility of content. Many consumer sites fill their pages with content written in marketese by the company itself. In health care, that won't fly. So the CIOs cull content from sources that consumers already trust, sources such as the American Medical Association and Johns Hopkins University.

Aetna Senior Vice President and CIO Wei-Tih Cheng has gone one step further. Staff physicians from Harvard Medical School review all of Aetna's Web content, which is gathered under the brand IntelliHealth, a subsidiary.

CORE TECHNOLOGY

CIOs can be as innovative as they please on the consumer-facing side of their new insurance plans. But claims still have to get processed. If they don't, the new model will fail. And if the claims systems, or prescription databases, can't send their data to the new websites as soon as the data is entered, then the personalized websites for the insured will contain erroneous information.

As always, integration is key. When you build new systems, you have to make them serve the legacy systems, not the other way around. Meshing the new with the old is done by using brand-name players, Casurella explains. "We develop based on Java. We make sure it will scale." She says proprietary is the enemy here.

Health Care as a Commodity

The benefits of the new approach are significant. The insurance companies can butt out of the doctor-patient relationship until the allowance runs out—which, if the technology is tuned correctly, shouldn't happen.

How to Build CRM from the Ground Up

HUMANA AND AETNA are deep-pocketed insurers. Destiny Health is funded by a deep-pocketed insurer, and Definity Health is a 4-year-old startup that relies solely on venture capital. Despite these radically different starting points, the CIOs of all these companies have built the technology that drives their new health-care plans in remarkably similar ways. The lessons here are universally applicable to any industry where CRM and customization will play a role. They are:

Start simple so that you can move quickly. "We focused on getting the bare minimum working," says Deborah Casurella, CIO of Definity Health in St. Louis Park, Minn. "The interface was basic. Everything was basic. I told the company we'll pretty it up later. The first order of business was making sure we could process claims accurately."

That doesn't mean don't have a plan. Even as Casurella threw her plan together, she knew she would have to rearchitect her data model to prepare the system for scaling to thousands of customers. CIOs must also plan policies for protecting confidential data, such as prescriptions, online. Then there's long-term

planning: "I'm planning infrastructure so that sometime down the road when you need a physical you'll be able find out what you'll pay at five different local providers," says David W. Goltz, CFO and interim CIO of Destiny Health in Bethesda, Md.

"Partner before you buy. Buy before you build." So says Bruce Goodman, CIO at Louisville, Ky.-based Humana, who relies on no fewer than eight partnerships, chiefly one with EDS for core systems. Whatever building he did came in the Web design arena.

Build to scale. It's no use moving fast if you're building to support a limited number of users for a pilot and, once successful, realize the system won't scale. Goodman has already rolled out his system to 14,000 employees and hopes it will eventually be used by millions. Goltz relies on an Oracle-Sun Microsystems combination he keeps flexible. "We can scale it quickly; we can change it quickly," he says.

"Don't box me in." Says Casurella: "We've changed and evolved in 18 months more than even I imagined. I won't box myself into a technological corner. I have to think about where IT will be in three months."

—S.B.

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That should cut into the massive bureaucracy of reimbursement, copays and network referrals. Employers can offer their workers broader coverage since their employees can apply the medical allowance to whatever care they choose. And the employees can choose what drugs to use and what doctor to go to based on cost and need.

"It's the radical free marketization of health insurance," says Goltz of Destiny Health.

But that free market aspect of the plan worries many health-care experts.

Even the man credited with conjuring up managed care, Uwe Reinhardt, an economist at Princeton University, is concerned. Reinhardt, along with others like Mathematica's Chollet, say the new model could end up shifting cost to the sick and the poor by making them pay more for their care. In the United States, about 80 percent of health-care expense is incurred by 15 percent of the population, according to Reinhardt. But that's not how the cost is currently distributed. There's always been a cross-subsidy whereby the healthy pay more into a pool of risk to help cover those with more health-care needs.

"Normally we think this is fair. Something that, as a society, we should do," says Dr. Stephanie Woolhandler, a practicing physician who also teaches at Harvard Medical School. "These plans eliminate that."

With the new plans, for instance, healthy people can choose less expensive generic drugs. They can choose to go to community hospitals, rather than the more costly teaching hospitals. The CRM systems will automatically generate a plan with lower cost for someone who is healthy. A chronically ill patient who needs brand-name drugs and requires specialists simply won't be offered the choice of the less expensive plan. And since research shows that the poor are more likely to be chronically ill, the most expensive customized plans may be offered to those who can least afford them.

The new plans create a two-tiered system in more ways than one. The technologically literate who have access to the Web are

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Will CRM-generated health plans lead to rationing? Go to www.cio.com to **WEIGH IN** with your answer in this forum.

more likely to benefit from the CRM offerings than those not so connected.

Already, some doctors have started offering 24-hour "concierge" service whereby a patient can pay for the doctor's 24-hour availability and other deluxe services. It's not a stretch to envision IT allowing insurance companies or providers to create Web content for the premium-paying customers only, or set up special e-mail addresses to which a doctor gives priority.

**"Health care
is not like buying a car.
If you're sick and
you have to take the
cut-rate model, that could
be a wrenching piece
of news."**

**-DEBORAH CHOLLET,
HEALTH-CARE EXPERT AT MATHEMATICA
POLICY RESEARCH**

After all, if health care is commodified, the more you pay, the more you will get. And vice versa.

Chollet believes this is a dangerous, undemocratic trend. "We need to think about health care differently," she says. "It's not a car, where if you can't afford the luxury model, you settle for something less. In health care, if you're sick and you have to take the cut-rate model, that could be a wrenching piece of news."

By putting the money in the consumers' hands, they also might be less inclined to spend it on necessary care. "You'll have fewer people going to the emergency room for a cold because it will cost them \$100. That's good," Reinhardt says. "But you'll

also have fewer people getting a routine colonoscopy, because it costs \$1,000 out of pocket. That's bad."

The worst part of this for Reinhardt and others is the role technology is playing. "IT is making the capacity to discriminate worse," says Chollet. "It's frustrating."

Health-care CIOs are cognizant of these ethical issues. And they say they are trying to address them. Most of the new plans now try to separate "cross" services (hospital visits and emergency care) from "shield" services (doctor's visits and preventative care). At Destiny, for instance, Goltz's plan removes necessary outpatient procedures, hospital admissions and medications required for chronic illness from the savings account allowance. "Look," Goltz says, "you break your arm and need surgery, you're not going to want to negotiate the best price with an anesthesiologist. There's a certain point where health care shouldn't be negotiated. But there are plenty of services where it must be."

What's certain is that CIOs will continue to be part of the mix when it comes to health policy. "IT has been and will continue to be the largest part of our organization," says Anthony Miller, CEO of Definity, to whom Casurella reports. One of Definity's customers is Textron, the parent company of Cessna Aircraft and Bell Helicopter.

Miller says the central role IT plays in his company's product has had an unintended benefit: staff retention. When IT workers feel crucial, they tend to stick around. Definity has lost only two IT staffers in two years. "Having [Casurella] at the table is not a question for us," Miller adds. "It's a necessity."

"Traditionally, the CIO's role in health care was supportive, reactive," Goodman says. "This is the most exciting opportunity for CIOs I've ever seen. We've slowly moved out, reaching further and further into the organization. Now, here I am shaping health-care policy. This has to be the culmination for our field." **CIO**

What do you think of customized health care? Let Senior Writer Scott Berinato know via e-mail at sberinato@cio.com.

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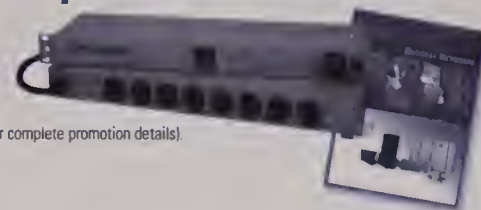


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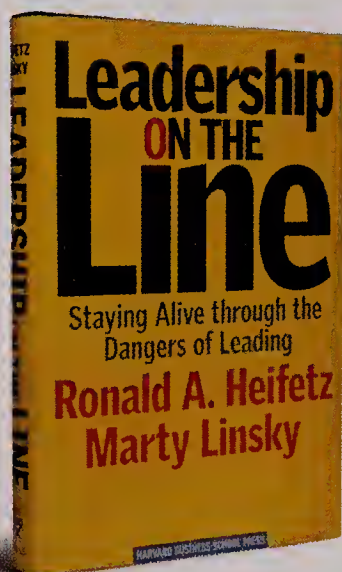
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MANAGING people POLITICS

Line up partners, position your enemies, and control those on the fence—six lessons in being a leader

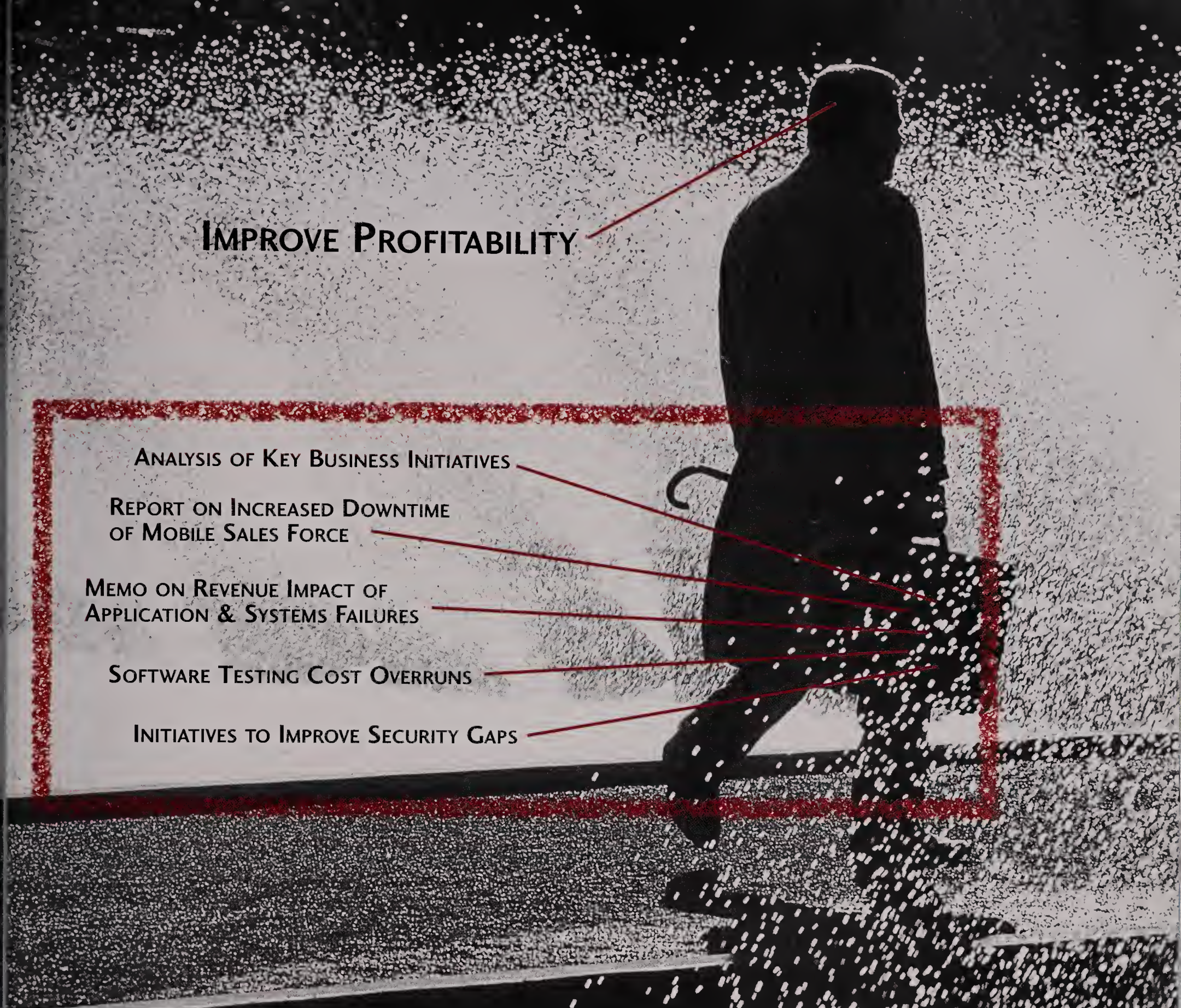
BY RONALD A. HEIFETZ AND MARTY LINSKY



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ONE OF THE DISTINGUISHING QUALITIES OF SUCCESSFUL people who lead in any field is the emphasis they place on personal relationships. This is certainly true for those in elective office, for whom personal relationships are as vital as air is to breathing. The critical resource is access, and so the greatest care is given to creating and nurturing networks of people whom they can call on, work with and engage in addressing the issue at hand.

There are six essential aspects of thinking politically in the exercise of leadership: one for dealing with people who are with you on the issue, one for managing those who are in



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opposition, and four for working with those who are uncommitted but wary—the people you are trying to move.

FIND PARTNERS

Finding partners is sometimes easier said than done. Both your own faction and other camps will happily watch you take on the challenge alone.

Partners might push their own ideas, compromising your own. Connecting with them takes time, slowing you down. And working with a group might dilute your leadership—a drawback if it is important that you get credit, or if you want to reassure yourself and others of your competence.

Tom Edwards and Bill Monahan worked in different parts of a manufacturing company in the Northwest. Tom, who worked in information technology, had found in Bill, who worked in sales, a reliable ally for moving the company kicking and screaming into the world of high-speed IT. Bill not only worked on the IT adaptation within his own group, but he gave Tom credibility on the issue companywide.

Tom and Bill were also good friends, and their families socialized with one another. One evening over dinner, Tom shared with Bill his strategy for getting the senior management team to approve the purchase of a new information management system at a meeting the next day. In the long run, the new system would save the company millions of dollars, but in the short run implementation required a difficult and painful tran-

sition in which some folks, including some people in sales, would probably lose their jobs.

Tom sensed some coolness in Bill after he laid out his plan and asked whether something bothered him. “I wish you hadn’t told me,” Bill said. “I need to protect my people on this one, and now you’ve given me some important information as to how I can do that before tomorrow’s meeting.”

In the end, Tom did not lose the alliance because Bill had openly shared his conflicting loyalties. But more often in such cases, an ally like Bill would have just listened, and in the end, he might be tempted by the easier option of staying loyal to his sales group and, in their interest, abandon Tom. All the while, a person in Tom’s shoes might show up at the meeting thinking he had done his groundwork, only to find that his ally had done some preparation too and was taking action to derail the project.

It’s a mistake to go it alone. Before your next meeting, first make sure you’ve made the advance phone calls, tested the waters, refined your approach and lined up supporters. But in the process, find out what you are asking of your potential partners. Know their existing alliances and loyalties so that you realize how far you are asking them to stretch if they are to collaborate with you.

KEEP THE OPPOSITION CLOSE

To survive and succeed in exercising leadership, you must work as closely with

your opponents as you do with your supporters. Most of us cringe at spending time with and especially taking abuse from people who do not share our vision or passion. Too often we take the easy road, ignoring our opponents and concentrating on building an affirmative coalition. But rather than simply recognizing your own anxiety and plowing ahead, you need to read this anxiety both as a vulnerability on your part and as a signal about the threat you represent to the opposing factions. These are clues to the resistance you will face, made worse if you do not engage with your opposition.

People who oppose what you are trying to accomplish are usually those with the most to lose by your success. In contrast, your allies have the least to lose. In other words, opponents who turn around pay dearly in terms of disloyalty to their own roots and constituency; for your allies to come along may cost nothing. For that reason, your opponents deserve more of your attention, as a matter of compassion as well as a tactic of strategy and survival.

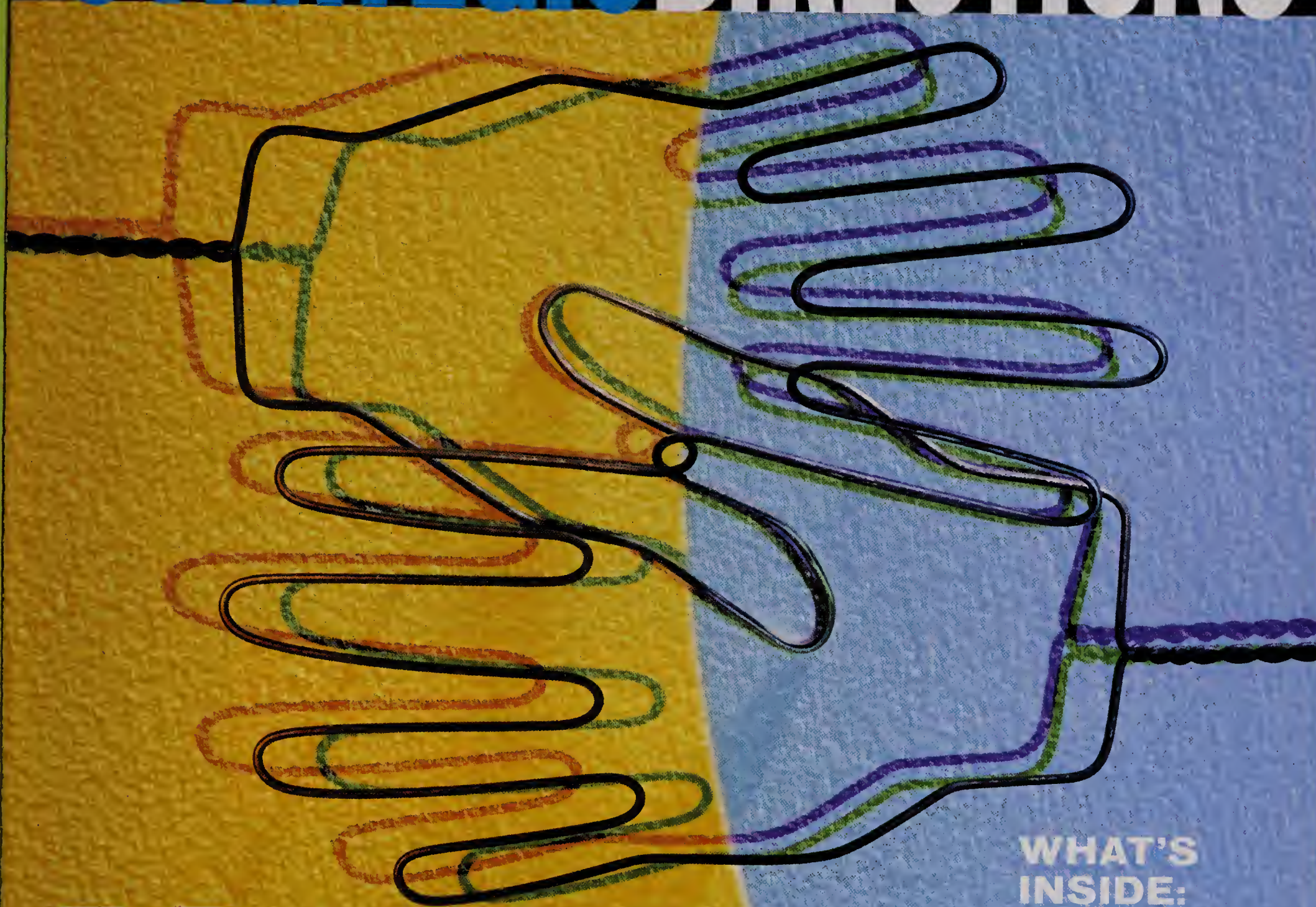
Keeping your opposition close connects you with your diagnostic job too. If it is crucial to know where people are at, then the people most critical to understand are those likely to be the most upset by your agenda.

While relationships with allies and opponents are essential, it’s also true that the people who determine your success are often those in the middle, who resist your initiative merely because it will disrupt their life and make their future uncertain. You need to ensure that their general resistance to change doesn’t morph into a mobilization to push you aside. What follows are four steps you can take that are specifically focused on them.

Continued on Page 116

The people who determine your success are often those in the middle, who resist because it will make their future uncertain.

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TALK ISN'T CHEAP

COMPANIES REAP PAYOFFS WHEN THEY ALIGN – AND COMMUNICATE – NEW E-BIZ PROCESSES AND SYSTEMS

NOTICE ALL THE TALK LATELY about collaboration?

This is the other half of e-business; without collaboration, the sell side — customer-facing interactions and transactions — cannot deliver.

And deliver it must.

Observers estimate that roughly 7 percent of overall revenues are now generated online. In five years, predicts Forrester Research, online business will account for 20 percent of overall revenues.

“E-business — its technologies and models — is not a fad,” says Ralph Welborn, senior vice president at KPMG Consulting. “The connectivity — of processes, protocols and other forms of technology — is becoming ubiquitous and essential for everyday business.”

Meanwhile, the potential for e-business-based cost reductions and productivity improvements is just beginning to be realized. For instance, by automating its purchasing, FedEx has reduced procurement cycle times by 20-to-70 percent and cut the number of its suppliers in half. Research by MIT's Center for eBusiness cites abundant payoffs from collaborative e-business: up to 50-percent inventory reductions, and 40-percent improvements in on-time delivery.

PROCESS FIRST

The benefits from e-business applications are greatest when companies first

re-design their processes and then bring in technology to implement and support these new processes. According to Andrew Bartels, research leader, e-business applications and strategies, at Giga Information Group, “Failures arise when companies introduce the applications without changing business processes.”

A glance at the trouble spots makes it clear that both processes and

technologies must be adjusted to foster interactions not only across an enterprise but between them.

“Many corporations have hugely disparate networking systems that don't fully and efficiently support their needs,” says Jorge Blanco, director of strategy and planning at Avaya Inc. “In the absolute worse-case scenario, the system actually thwarts the ability of the company to be responsive.”

THE ROI OF COLLABORATION TECHNOLOGIES

Hints about the payback potential of collaboration technologies can be found at companies like IBM, which claims annual savings of \$100 million thanks to investments that enable mobile and telecommuting employees to interact. Similarly, AT&T (where 49 percent of managers telecommute at least one day a month and 10 percent do it full time) reports \$25 million a year just in real estate cost reductions.

Hands down, the key collaborative application today is e-mail, which has been so successful at enabling interaction across time zones and systems diversity that new capabilities are emerging: instant messaging, document sharing, content management and web conferencing.

Issues to consider when deploying collaborative technologies:

- **SECURITY.** Many organizations outsource to secure their collaborative systems, so it's important to make sure these capabilities are sufficient and appropriate.
- **SYSTEMS AND PROCEDURES.** Workplace habits sprout around use of collaborative technologies; these need to be designed — via such constructs as virtual teaming, communities of practice, threaded discussions, etc. — to help realize enterprise goals.
- **CONTENT MANAGEMENT.** Emerging technologies help collaborators deal with information inundation, automating aspects of information sharing and routine workflows.

E-BUSINESS: PAYOFFS & PARTNERSHIPS | TALK ISN'T CHEAP

It's not hard to see why:

- Data important to decision-making remains isolated in functional silos, unavailable to other systems,
- Single-task applications don't take into account and so don't respond to the impact of broader dynamics and conditions,
- Functionally-oriented chunks of IT infrastructure can't respond to cross-company demands and share data only with difficulty (if at all).

KEYS TO E-BUSINESS STRATEGY

In order to achieve the desired characteristics of a uniform e-business infrastructure, Kieran Taylor, director, product marketing, at Akamai Technologies, says enterprises must eliminate the Internet as the single point of

failure and reduce the overall complexity in their infrastructures.

KPMG Consulting's Welborn suggests several strategic initiatives CIOs can launch to realize this vision:

- **SET UP PROJECT OFFICES** to oversee IT investments, support projects through standardized methodologies, control project progress, better plan for resources, etc.;
- **IMPLEMENT QUALITY PROGRAMS** to define and monitor key performance metrics (six sigma, etc.);
- **ESTABLISH COST MANAGEMENT PROGRAM OFFICES** to realize savings in consolidating servers and networks, better managing software licenses, off-shoring development, renegotiating with vendors, outsourcing data centers, etc.;
- **REFRESH THE TECHNOLOGY INFRA-**

STRUCTURE to deploy more effective technologies — such as IP telephony, thin clients, IP-ready corporate networks, etc. — with the assistance of key partners and vendors;

- **OUTSOURCE KEY DOMAINS OF THE IT INFRASTRUCTURE** when appropriate, such as data center operations, field support, etc.

"It's critical," Welborn notes, that e-business initiatives "be seen as capability-enhancing and as developers of assets that can accelerate the creation of value."

He recommends aggressively seeking out the assets and incremental capabilities that are being developed and ensuring that these assets can be and are being leveraged elsewhere — whether internally or externally to the organization. **SD**

COMPANY PROFILE

E-BUSINESS BENEFITS FROM MOBILE VOICE AND DATA COMMUNICATIONS

E

-business is about communication. Faster, easier, more flexible and intuitive ways of exchanging information is what makes e-business possible. Cingular Wireless, a leader in mobile voice and data communications and the second largest wireless company in the U.S., employs a variety of robust and advanced digital technologies to help customers

build wireless strategies around their own unique organizational needs and e-business demands. Using both Mobitex and GSM networks in various parts of the nation, Cingular delivers high quality digital voice, messaging and data products to the wireless community.

MOBITEX HAS YOU COVERED

Cingular operates a nationwide Mobitex network, covering 93 percent of the urban business population in the U.S. A packet-switched radio technology, Mobitex provides always-on instant two-way messaging and data delivery service to customers across the country and is a preferred choice for wireless communications. What's more, Cingular's Wireless Mobitex network has been optimized for the in-building coverage and device battery life looked-for by e-business customers. Mobitex has networks operating in 22 countries.

NEXT GENERATION IS NOW

GSM is currently the world's dominant standard as well as the fastest growing wireless telecommunications technology in the world today. Even so, Cingular has already launched the next generation of wireless and voice networks in its GSM markets — these GPRS packet networks can carry voice and data at speeds of up to 115kbps.

Cingular Wireless serves more than 21.6 million customers in 38 states, the District of Columbia and two US territories. Cingular operates in 42 of the top 50 markets nationwide. Cingular Wireless operates its Mobitex data service throughout the United States, covering more than 93 percent of the urban business population located in 492

Metropolitan Statistical Areas (MSAs) and non-MSAs with a total population of 200 million people.

3G, or the third generation of wireless is just around the corner, and Cingular is leading the way with leading-edge solutions for e-business communication needs.



What do you have to say?

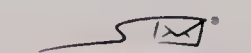
For more information on Cingular's Wireless solutions, visit www.cingular.com



When RIM, developer of BlackBerry™, needed a reliable network partner, they looked to us. So it's only natural that we chose BlackBerry as a wireless e-mail solution for our customers. Handling over 9 million secure e-mails everyday, we help businesses keep things moving by sharing information anytime and anywhere. It's just one way we help build wireless solutions around our customers' specific needs. Maybe it's time we talked. Give us a call at 1-866-446-7594, or visit us at www.cingular.com/business. Also, feel free to download our "orange" paper, *Executive Guide to Wireless Data Strategies*, when you visit our website.

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WIRELESS

What do you have to say?™


BLACKBERRY
WIRELESS EMAIL SOLUTION

E-BUSINESS: PAYOFFS & PARTNERSHIPS | INTEGRATION

RETURN ON INTEGRATION

YES, SYSTEMS INTEGRATION COSTS MONEY, BUT LACK OF IT COSTS BUSINESS

JORGE BLANCO, DIRECTOR of strategy and planning at Avaya, says there is absolutely no question: "The tighter the integration of various IT systems, the greater the ability to conduct e-business productively and efficiently."

An early-2002 study by NerveWire bears this out, finding that the most highly-integrated companies see revenue boosts that average 40 percent, customer retention improvements of 35 percent and cost reductions of 30 percent. What distinguishes companies with these results? They've redesigned their processes and learned to exploit shared applications and databases.

"... A TREMENDOUS MESS"

Many companies have invested millions in their existing infrastructure, points out Jon Chun, CEO of SafeWeb, Inc. "Their business depends on their existing systems, which they will not, and cannot, get rid of," Chun says. The challenge for IT decision-makers is to find new technologies that interoperate with existing systems without adding to the complexity or overhead.

This doesn't come cheap. On average, integration costs claim almost 25 percent of IT budgets, according to one survey.

"Companies find themselves with a tremendous mess," says Julie Giera, research fellow, IT services, at Giga Information Group. Millions of dollars have been spent to create these isolated solutions in each business unit, none of which are integrated with the rest of the computing platforms. "It becomes expensive to maintain and almost prohibitively complex to enhance," Giera says.

WHY WEB SERVICES MATTER

"Web services enable the rapid deployment of system integration solutions both within the enterprise and between partners or suppliers," says Richard Bell, director, product marketing, at Akamai Technologies, "because they provide a standard interface between different systems."

Delivered over the Internet, web services applications will work on virtually any device, from PC to cellphone, and can be mixed and matched as desired by users. Because web services employ a common set of standards and protocols, disparate systems can share data and services without custom

coding. The result: dynamic, realtime connectivity between the online operations of different organizations.

This is the first time, notes Mike Gilpin, research fellow, application infrastructure, at Giga Information Group, that such a broad cross-section of vendors has agreed on such a fundamental tool for the integration of software applications. "It will take a few years for this broad support to be fully delivered," Gilpin says, "but it is already clear that the support is there, and it will facilitate much easier integration of applications both within and among companies in a value chain."

It's been estimated that web services will reduce costs associated with developing system interfaces — middleware — by as much as 20 percent.

ENTERPRISE SECURITY

In order to stay competitive," says Jon Chun, CEO of SafeWeb, Inc., companies need to extend their internal resources to remote users and provide global customers with instantaneous information. "But they must also protect and secure this information as it travels," Chun says.

This means having the capacity to: ■ **DEFLECT ATTACKS** with hardening techniques (encryption, virtual private

CASE STUDY**E-BIZ INFRASTRUCTURE SOLUTION STRENGTHENS VICTORIA'S SECRET BRAND****F**

or Tim Plzak, director, advanced technology, Limited Technology Services, provider of information technology services and support to the parent company of Victoria's Secret, there are compelling reasons for turning to an e-business infrastructure solutions provider.

"Start with cost," says Plzak, "Not just to build, but to expand capacity or increase scalability of your web presence. Those numbers grow very quickly."

And, he continues, even if you are willing to tackle the seen and unforeseen costs, do you have the core competencies required, do you have the resources available? Because at the end of the day, "downtime and performance issues typically result in lost business, lost revenue."

"We've seen significant, true total-cost-of-ownership savings because of our partnership with Akamai," he reports.

Akamai is a leading provider of secure, outsourced e-business infrastructure services and software. Plzak has leveraged Akamai's infrastructure, which, he says, means "we actually have to build less to deliver more, faster. As importantly, by offering a site end-users can rely on, we have strengthened our brand equity."

DISTRIBUTED IS BETTER

And Plzak believes strongly in a distributed e-business infrastructure as the way to build a secure, reliable, high performing website that will keep customers committed to the Victoria Secret brand.

"From the end-user perspective, we've dramatically increased reliability and performance by serving up content from the edge, from the Akamai servers closest to our customer," he explains.

"Simply put, distributed is better because it reduces your business and

bandwidth risk, as well as single-point-of-failure issues," he says. "And thanks to Akamai's architecture, distributed is more secure than ever."

"Enterprises may think it's too difficult to engage with a partner and distribute content from the edge, but the reality is that the learning curve is extremely fast on all Akamai products," says Plzak.

FLAWLESS PERFORMANCE

Victoria's Secret has already leveraged Akamai to distribute content and streaming media, while Akamai's FirstPoint load balancing solution and SSL secure caching service played significant roles in the success of the Victoria's Secret webcast fashion shows.

"We dynamically monitored the performance of the website throughout the events, distributing content and users appropriately — we were streaming the webcast video at unprecedented levels," he says. "We did shop while you watch, handling astonishing bursts of traffic. And we managed that whole process through an SSL network built in partnership with Akamai just for the event. It performed flawlessly."

Plzak has a lot of respect for Akamai's vision and technical acumen and is looking forward to exploring opportunities for EdgeSuite, which supports application serving from the edge.



Tim Plzak
director, advanced technology
Limited Technology Services

For more information, visit www.akamai.com/CIOmag

networks, firewalls), backup capabilities, authentication and access control, configuration management,

■ **RECOGNIZE INTRUSIONS AND LIMIT THEIR DAMAGE** using tools that monitor systems and networks, filter content, scan for viruses, identify intrusion patterns,

■ **RESTORE SERVICES AFTER AN ATTACK OR FAILURE**, relying on business continuity plans, redundancies and backup,

■ **ANALYZE SECURITY INCIDENTS** to learn from past incidents,

■ **MANAGE SECURITY ENTERPRISEWIDE**

with security information management products.

Security product vendors have been combining once-distinct capabilities, such as firewall and VPN, in a single appliance that costs less and features plug-and-play ease of use.

SafeWeb's SEA Tsunami appliance takes the model a step further by embedding multiple technologies into one security appliance that plugs into existing networks. With it, companies can quickly build secure, legacy-compatible extranets that enable

remote users to access network resources via web browsers. Administrators use the same browser to centrally manage all remote users as well as to customize access control and user portal design.

THE STORAGE YOU NEED

So much data is captured by modern 24X7-style operations, says Ralph Welborn, senior vice president at KPMG Consulting, that the overall cost of enterprise storage is, in many cases, growing more rapidly than the cost of

E-BUSINESS: PAYOFFS & PARTNERSHIPS | INTEGRATION

WHAT ARE WEB SERVICES?

A means of integrating diverse applications and systems that are linked to an Internet protocol (IP) backbone, web services are founded on an architecture that defines ways to communicate by means of several standards. These include the data exchange standard, XML, as well as three others:

- Simple object access protocol (SOAP) for transferring data,
- Web services description language (WSDL) for describing available services and
- Universal description, discovery and integration (UDDI) for listing available services.

Major vendors, including Microsoft (.NET), Sun Microsystems (iPlanet), IBM (WebSphere) and Hewlett-Packard (NetAction) have invested heavily in developing web services.

the servers and other computer equipment needed to access and process the data it contains. "This means that a CIO cannot treat all data equally," Welborn says. "The business risk of losing each data set must be analyzed and that data stored in a manner that is appropriate for the risk of loss and time of recovery."

The good news is that comprehensive storage management solutions are now available from Fujitsu and TrueSAN. And the new Internet small computer systems interface (iSCSI) standard promises storage and retrieval at gigabyte-per-second speeds over TCP/IP networks.

IP MARRIES VOICE AND DATA

IP telephony solutions available now can support as many as 1 million users on a network and deliver all the quality, reliability and features of traditional PBXs right to the edge, says Avaya's Blanco. "Done well, IP telephony lets companies work more efficiently all through the network — whether the

network supports global, campus, branch or remote office and mobile or home-based workers," Blanco says.

Consider JetBlue, a new U.S. airline, which keeps its fares as much as 65 percent below rivals. One of its secrets: 90 percent of reservations are handled either online or by home-based agents using a voice-over-IP (VoIP) CRM solution.

Compared to analog phones tied to traditional PBXs, VoIP phones (which are connected to an IP telephone data server using the same cabling as the rest of the IT network), cost less to install and maintain. And the poor quality triggered by network congestion and packet loss have been addressed by quality-of-service improvements.

These days vendors offer converged voice and data solutions of varying combinations and strengths.

Avaya's Unified Communication solutions, for instance, combine voice, video, data collaboration, and directory access capabilities. Components include unified voice, e-mail, fax and

video; multimedia conferencing and webcasting; integrated access to directories and databases; and customizable calendaring, scheduling and mobility handling.

WHAT ABOUT WIRELESS?

The U.S. lags Europe and parts of Asia when it comes to wireless, but that'll be changing soon, and IT infrastructures will have to be adapted to an increasingly mobile workforce. Considerations:

■ WIDESPREAD 3G IS ON THE WAY.

"Third-generation wireless services — defined as 2-Mbps data throughput in-building, 384-kbps walking speed and 144-kbps vehicular speed — will be available in 2005, in an average traffic-load situation," says Brownlee Thomas, research director, international telecom services, at Giga Information Group.

■ **MOBITEX SERVICES OFFER A 3G ALTERNATIVE.** Always-on, data-only, packet-switched Mobitex services are much-used by public transport operators in the U.S., Europe and elsewhere. A variety of devices, including Research In Motion's BlackBerry, work with Mobitex. In the U.S., Mobitex services are available from Cingular Wireless.

■ **SUPPORTING WI-FI.** "Many companies find that mobility results in increased productivity and that increase in productivity can be quantified," says Stan Schatt, research leader, communications and networking, Giga Information Group.

Five years ago, FedEx began using wireless LANs (wi-fi) in its package sorting and aircraft maintenance operations. As the company doubled its wi-fi bandwidth by upgrading proprietary systems to 802.11b-based LANs, it saw productivity leap 30 percent at its package sorting centers. Now FedEx is implementing wi-fi across two campuses as an extension of its corporate network. **SD**

CASE STUDY

FOR HIPAA COMPLIANCE, NAMM CALIFORNIA USES SECURE EXTRANET APPLIANCES



Although NAMM California (North American Medical Management, California) still relies on a paper-based system to communicate sensitive reports to its member physician groups, Chuck Wunderlich, vice president of e-business and applications development, has a secure electronic vision for his company.

"What I envision is a series of web sites we create for the use of specified physicians groups which provide sensitive and proprietary clinical and fiscal information from us to them in a HIPAA-compliant environment," says Wunderlich. What's more, he wants to extend the secure electronic services NAMM California provides to member groups to e-mail.

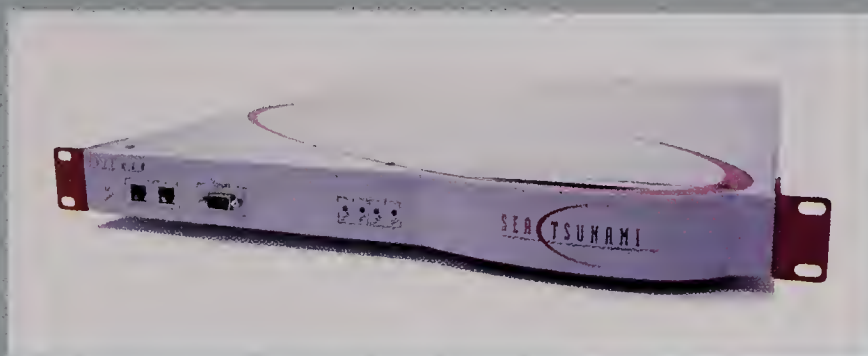
"The need to be HIPAA-compliant in electronic mediums extends to e-mail. Physicians can't even discuss a case with each other via e-mail unless that e-mail system follows HIPAA's guidelines for security," Wunderlich notes. "That's a lot of complexity for most physician's groups to have to worry about. I want to help our physician's groups share information with us and each other in a safe and secure environment — it's a way NAMM California can add value to the services we deliver."

As the second largest healthcare organization in the nation's largest state, NAMM California manages a wealth of protected healthcare information. Under contract with numerous physicians groups throughout California, NAMM California manages all of the doctors' administrative contact with HMOs — everything from paying claims and member eligibility to customer service. And, like members of its industry nationwide, NAMM California will have to make all electronic communication compliant with the recently released federal Health Insurance Portability and Accountability Act (HIPAA).

SAYING NO TO VPN COSTS

"We already had a secure VPN for employee access to e-mail," reports Wunderlich. "And I didn't want the same complication and expense of set-up and administration for my project — in particular, I didn't relish having to set-up, install and support the client software for every physician. When I learned about SafeWeb and what they were offering, I knew I had found exactly what I needed and wanted."

According to Wunderlich, SafeWeb's Secure Extranet Appliance



SafeWeb's Secure Extranet Appliance (SEA) Tsunami

(SEA), the SEA Tsunami, can give NAMM California's remote users (physicians groups) secure access to NAMM California's corporate intranet from anywhere and at any time using just a Web browser — no hardware, software, downloads, reconfiguration, Java or Active X.

"There's no need for the lengthy planning that must be done with standard VPN solutions; no changes are needed to our existing network infrastructure and there's no need to install any special client or server software," says Wunderlich. "With just a standard browser and password, our members can be assured that all of their communications with us and through us are secure. And the SEA Tsunami centralizes all management of remote users — administrators can see everything using a simple web interface. There's also some quite useable portal software that I've found to be very flexible and easy to use."

"This is simply the right product for my project because it costs less and is orders of magnitude easier and faster to deploy and support than any of the other alternatives available."

Currently going into a pilot test with one of its physician's groups, Wunderlich is excited about bringing secure electronic transactions to his company's customers and he is confident in SafeWeb's ability to help him reach his goal cost — and time — effectively.

"SafeWeb has been great to work with, very helpful, technically astute and supportive," he says. "This is a good partnership because SafeWeb is delivering something truly useful to NAMM California and its customers."

For more information about making your security simple, visit www.safeweb.com

E-BUSINESS: PAYOFFS & PARTNERSHIPS | GETTING CRM RIGHT

GETTING CRM RIGHT

IT ISN'T JUST A SINGLE PROJECT; IT'S A NEW WAY OF LIFE

THE PRESSURE IS INTENSIFYING at both ends: customers want better service, more channels; stakeholders want lower operating costs.

Organizations can make progress toward these goals with systems and technologies that help them manage their relationships

— with customers, suppliers, partners, employees.

CRM: A COMPETITIVE NECESSITY

CRM failure rates are reported to be as high as 80 percent, according to some analysts. So what does it take to succeed at CRM?

“Executive leaders often have a detailed vision of the end result without a thorough understanding of the bridges

that must be crossed during the process,” says Jim Smith, vice president, CRM solutions, at Avaya Inc. “Defining key success points along the implementation path and taking a systematic approach to completing and evaluating each stage before proceeding to the next helps companies build on a pattern of success.”

Some advice culled from observers and experts:

Continued on page 13

CASE STUDY

KPMG CONSULTING HELPS METLIFE DEVELOP WEB-BASED BENEFITS PLATFORM

MetLife's Institutional line of business asked KPMG Consulting to work with the e-business application development team to help establish and build an integrated service portal. The new portal would provide a single point of access to all products and allow individuals to perform online self-service such as enrollment, benefit inquiry, and other transactions utilizing electronic signatures.

“KPMG Consulting brought three specific things to the table: first, a proven track record of delivery; second, industry-specific knowledge, both in terms of traditional competitors and emerging technology-enabled competitors; and finally, they not only delivered the point solution to the specific business problem that we were looking to address, but also architectural and knowledge frameworks that we can re-use and re-deploy over and over again through succeeding efforts within the company,” notes Mark Hammersmith, SVP/CIO Institutional Business, MetLife.

Based on KPMG Consulting's industry-specific knowledge and technical experience, MetLife asked the KPMG Consulting team to concentrate on the development and implementation of an Internet-enabled enrollment and service system. The KPMG Consulting team worked with MetLife Institutional Business leadership to:

- Analyze current enrollment processes
- Identify opportunities for leveraging technology across the various product lines
- Develop business requirements
- Participate in the technical design and development
- Present a proof of concept using Web-services that allows for integration with MetLife's multiple backend systems
- Implement an initial online Internet enrollment application

- Deliver the contextual application framework
- Transfer knowledge to MetLife employees

IMPROVING THE CUSTOMER EXPERIENCE

With the new integrated portal and the online enrollment system in place, MetLife is now able to provide group customers with a single destination for product information, enrollment, and other transaction processing. Completed on time and within budget, the successful project implementation helped MetLife Institutional Business:

- Improve the customer experience
- Reduce processing costs
- Enhance service capabilities for plan sponsors
- Increase operating earnings
- Implement cutting-edge technology
- Enrich and energize MetLife employees

“MetLife's employee benefit portal allows employees to make the most of their benefits by providing access to personalized information, empowering employees to make benefit-related decisions and manage their benefits themselves through self-service. This benefit portal provides a multi-product solution that's easy for employees to use. This new technology, delivered with KPMG Consulting, supports MetLife's leadership position in the Institutional Benefits marketplace,” reports Jim Gemus, vice president, Institutional eBusiness and Banking, MetLife.

To learn more, contact KPMG Consulting at 1-866-FOR-KCIN or visit their Web site at www.kpmgconsulting.com

"We told KPMG Consulting: we need a web-based enrollment system so simple..."



Mark Hammersmith
CIO Institutional Business, MetLife

Paul McDonnell
Managing Director, Financial Services, KPMG Consulting

"...that our MetLife customers can more easily manage their financial future.

"The MetLife mission is to build financial freedom for our customers. KPMG Consulting worked with us to design and build an on-line system faster than we had thought possible. The new system gives our customers a single site for enrollment, product information, and performance.

"Our customers and our own employees are very happy with their 'new freedom.' Customer satisfaction scores are up, and so are employee productivity and our operating earnings."

"We're delighted that we surprised MetLife with how quickly we were able to help them design and build their new on-line system.

"But we're even happier that the system helped them become an even more successful company.

"After all, that's the reason we're in business."

YOU CAN HEAR THEIR STORY @ www.kpmgconsulting.com/results

BUSINESS SYSTEMS: STRATEGY IMPLEMENTATION RESULTS

KPMG Consulting



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AVAYA

COMMUNICATION WITHOUT BOUNDARIES

E-BUSINESS | GETTING CRM RIGHT

Continued from page 10

BIND TO BUSINESS STRATEGY. Companies need to be very clear about what type of CRM they're looking for, how it ties to their overall business strategy, and what type of results they expect, says Erin Kinikin, research leader, e-business applications and strategies, at Giga Information Group. "There's no such thing as a one-size-fits-all CRM solution," Kinikin says.

COPE WITH IMPLEMENTATION COMPLEXITY. Don't assume that CRM is a single project, warns Bobby Cameron, principal analyst, technology leadership, at Forrester Research. "Successful CRM investments break into at least four projects, based on the customers' perspective — awareness, consideration, purchase and service," he says.

MEASURE TWICE. Companies must build in measurement strategies with the technology implementation, says Kinikin. "Eighty percent of companies don't have a clear measurement strategy for CRM," Kinikin says. "How can you get where you want to go if you can't read the sign posts along the way?"

BRING IP INTO THE CONTACT CENTER. Yankelovich Partners research shows that 63 percent of potential web purchasers will not regularly engage in web-based transactions until websites enable them to interact with a human being. Internet-enabling the contact center can help.

When Arkansas-based SunTrust Credit brought IP telephony to its front- and back-office operations, productivity in its outbound call center went up nearly 80 percent. Its 50 agents can now handle more than 20,000 calls a day.

SPOT SELF-SERVICE OPPORTUNITIES. "Self-service is frequently implemented with the goal of saving money," says Avaya's Smith, "but it also provides customers with a welcome new avenue of interaction with a company." Self-service via voice and web-based inter-

action has been implemented profitably by many, many companies with the result being higher customer satisfaction, Smith adds.

In providing financial services to manufacturers, distributors, dealers and their customers, GE Capital Vendor Financial Services (VFS) fields 45,000 calls every month. Avaya's interactive voice response system, Conversant, enabled VFS to keep customer service quality high as call volume increased without adding staff. Conversant answers 98 percent of the calls VFS gets and its self-service capabilities resolve 27 percent of these calls without need of a customer service rep.

DELIVER CONTENT FROM THE EDGE. As the Internet gets more crowded, network complexity becomes an issue.

"Achieving simplicity and uniformity in network architectures has begun to take on greater urgency," says Kieran Taylor, director, product marketing, at Akamai Technologies.

Akamai runs a content delivery network that supports EdgeSide Includes (ESI), an open specification for assembly and delivery of highly dynamic web content. Content delivery takes place at the 'edge' of the Internet, from optimally located and load balanced servers that are, in turn, connected with content generation infrastructure deployed in well-connected central hosting networks or corporate data centers.

When gardening catalog retailer Smith & Hawken decided to redesign its website just before the 1999 holiday season, it turned to Akamai to handle image delivery. The new website can juggle 1,500 simultaneous visitors and uses a clean design that enables the homepage to be downloaded in just 1.5 seconds. Result: Holiday 1999 sales were 12 times 1998's, and since then the number of website visitors has grown by a factor of seven. **SD**

IP Telephony. Where to start?

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- Survivable remote location
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AVAYA

COMMUNICATION WITHOUT BOUNDARIES

BUY VS. BUILD

SOME BUSINESSES SAVE BIG HEADACHES AND DOLLARS BY OUTSOURCING E-BIZ INFRASTRUCTURE AND SERVICES

RUESCH INTERNATIONAL Finance moves lots of money — more than \$10 billion in cross-border transactions annually for nearly 30,000 corporate clients — and needs a secure intranet for communications between its offices around the globe.

The company's decision to trust Genuity to host an IP alternative to its legacy frame-relay network has paid off: annual bandwidth savings have added up to \$600,000; network engineering staff costs are down \$300,000; and PC training costs have been cut by \$100,000 a year.

Black Entertainment Television's website, BET.com, gets 1.5 million visitors a month and expects to be twice as busy by yearend. Keeping up with the traffic it attracted

was a struggle until it turned to Akamai's service, which for \$20,000 per month has enabled BET.com to double traffic and handle it six to 10 times faster — all without buying a single new computer or renting any more space in a data center. BET.com reports \$1.3 million in net first-year benefits from Akamai's services.

SIMPLIFY, SIMPLIFY

The ability to reduce and simplify mission-critical infrastructure and staff is

vital, asserts Kieran Taylor, director, product marketing, at Akamai Technologies. "When enterprises attempt to build out an e-business infrastructure on their own, the answer is a costly solution that lacks reach and performance," Taylor says. Moreover, this solution is difficult to manage — especially internationally — and requires dollars and time to keep up to date.

The use of an outsourced, managed global content and application distribution network eliminates the complexity of having to negotiate separate contracts with different network providers. In addition, the use of outsourcing enables the CIO to deploy scarce and skilled IT resources on the

ket of four new web properties by two months (with no additional hardware or staff) and took fewer than three hours to enable business intelligence tools.

When US Foodservice decided to expand its distribution business with a web-based retail channel, it turned to Genuity, which was already hosting the company's informational website. Despite the need to integrate legacy systems as well as database and operational systems from recent acquisitions, Genuity got Next Day Gourmet.com's website — complete with customized storefronts for US Foodservice's business-to-business customers — launched within a three-month deadline. Some

IF CIOs DO NOT AGGRESSIVELY, HONESTLY, AND OBJECTIVELY REVIEW THEIR CAPABILITIES, STRENGTHS, AND WEAKNESSES ... SOMEDAY THE DECISION ABOUT WHETHER AND WHAT TO OUTSOURCE WILL BE MADE FOR THEM.

things that they do best — creating the content and business applications that enable competitive advantage.

Using its own EdgeSuite e-business infrastructure services, Akamai saved nearly \$700,000 during the first year and expects to save \$275,000 a year more because it doesn't need to deploy additional websites. In the process, the company re-purposed \$62,000 worth of high-end servers, boosted the number of website visitors by 64 percent, decreased time-to-mar-

17,000 visitors showed up the first day, and both cost savings and improved customer service were quickly apparent. For instance, getting product from warehouse to customer now takes just two days rather than ten.

MAKING OUTSOURCING PAY OFF

Ralph Welborn, senior vice president at professional services firm KPMG Consulting, offers several recommendations for CIOs considering outsourcing:

CASE STUDY

INTERNET PROTOCOL (IP) TELEPHONY DELIVERS FOR SEATTLE TIMES



On the doorstep, every morning, no exceptions — that's the rule of the newspaper business.

And key to getting out the paper is an unfailing communications system.

"If we don't have communications, we don't have a newspaper," agrees Thomas Dunkerley, communications manager at the *Seattle Times*.

One of the nation's largest family-owned newspapers, the *Seattle Times* supports about 1,500 people on a multi-vendor network that encompasses the headquarters, three news bureaus, two contact centers, two printing facilities, and 22 distribution warehouses. Dunkerley's strict criteria for the newspaper's migration to IP telephony reflect how critical his communications are: "reliability, voice quality, cost savings, ease of deployment, and minimal disruption." His choice? Avaya™ Enterprise Class IP Solutions (ECLIPS).

In the *Seattle Times*' main facility a new Avaya™ S8700 Media Server connects to an Avaya DEFINITY® Enterprise Communications Server functioning as a media gateway. A fully-redundant, Linux-based server pair, the Avaya S8700 Media Server supports up to 12,000 IP stations and supports a mix up to 36,000 stations, which include analog, digital, and IP. With the traditional cabinet as a media gateway, it supports Dunkerley's existing PBX components as well as his new IP telephony deployment — significantly increasing his return on investment for both.

Running on the Avaya S8700 media server, Avaya MultiVantage™ Software extends reliability, voice quality, and full call processing function-

ality to the edge of the *Seattle Times*' network. Avaya MultiVantage is high-performance software that provides up to 99.999% reliability and more than 500 voice-application features. Open architecture enables easy, cost-effective interoperability with the *Seattle Times*' existing communications infrastructure, while performance ranging to 300,000 Busy Hour Call Completions (BHCC) supports the busiest contact center days.

FUTURE BENEFITS CLEAR ACROSS THE ENTERPRISE

Since migrating the newspaper's East Side News Bureau with complete success — no disruption, excellent voice quality, and compliments for the Avaya™ IP Telephones — Dunkerley will now extend IP telephony across the *Seattle Times*' network. Among the bene-

fits he's anticipating: contact center applications, ACD and IVR support, telephone portability, and remote administration.

"This particular solution," he says, "met our needs 'to a T.'"

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■ **DESIGN** a service operating model meticulously and clearly document and negotiate associated and appropriate service levels — include benchmark clauses;

■ **MAINTAIN** a strong strategy and architecture function in order to pro-actively control the outsourcer;

■ **SECURE** savings early in the contract, not at its end;

■ **SET** cost-saving targets as these will stretch the ability of the outsourcer to deliver the necessary quality; and,

■ **CONSIDER** fall-back strategies and multivendor configurations.

CREATING AN IT SERVICE DELIVERY STRATEGY

CIOs should closely evaluate where in their enterprise they truly add value to an IT product or service, suggests Julie Giera, research fellow, IT services, at Giga Information Group.

The danger here is that if CIOs do not aggressively, honestly, and objectively review their capabilities, strengths, and weaknesses — and create an IT service delivery strategy that is based upon those strengths and weaknesses — there will come a time where the decision about whether to

outsource and what to outsource will be made for them.

There also is much that internal IT departments can learn from professional services organizations about IT service delivery. "If an outsourcer can save 15 percent of your IT budget, and still post 27-percent gross margins, obviously they are doing something right," Giera says. It's worth taking the time to evaluate what best practices professional service providers employ that might be appropriate in the internal IT organization. **SD**



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Continued from Page 98

ACCEPT RESPONSIBILITY FOR YOUR PIECE OF THE MESS

If you have been in a senior role for awhile and there's a problem, it is almost certain that you had some part in creating it and are part of the reason it has not yet been addressed. Even if you are new, or outside the organization, you need to identify those behaviors you practice or values you embody that could stifle the very change you want to advance.

When you are too quick to lay blame on others, whether inside or outside the community, you create risks for yourself. Obviously, you risk misdiagnosing the situation. But you also risk making yourself a target by denying that you are part of the problem and that you too need to change. After all, if you are pointing your finger at them—pushing them to do something they don't want to do—the easiest option for them is to get rid of you. The dynamic becomes you versus them. But if you are with them, facing the problem together and each accepting some share of responsibility for it, then you are not as vulnerable to attack.

ACKNOWLEDGE THEIR LOSS

Remember that when you ask people to do adaptive work, you are asking a lot. You may be asking them to choose between two values that are important to the way they understand themselves.

You may be asking people to close the distance between their espoused values and their actual behavior. Martin Luther King Jr. challenged Americans in that way during the civil rights movement. Confronting the gaps between our values and behavior—the internal contradictions in our life and community—requires going through a period of loss. Adaptive work often demands some disloyalty to our roots. To tell someone that he should stop being prejudiced is really

If people cannot adapt, the reality
is that they become casualties.
This is virtually inevitable.

to tell him that some of the lessons of his loving grandfather were wrong. Yet the status quo may not look so terrible to those immersed in it and may look pretty good when compared with a future that is unknown. Exercising leadership involves helping organizations and communities figure out what, and whom, they are willing to let go. Of all the values honored by the community, which of them can be sacrificed in the interest of progress?

People are willing to make sacrifices if they see the reason why. But beyond clarifying the values at stake and the greater purposes worth the pain, you also need to name and acknowledge the loss itself. It's not enough to point to a hopeful future. People need to know that you know what you are asking them to give up on the way to creating a better future. Make explicit your realization that the change you are asking them to make is difficult and that what you are asking them to give up has real value. Grieve with them, and memorialize the loss.

MODEL THE BEHAVIOR

Avram was the CEO of a highly successful chemical factory in Israel. One day an explosion occurred on the line, tragically killing two of his employees. He quickly pinpointed the source of the problem and took steps to ensure that it could not happen again.

But whatever he did seemed not enough. Many of his best workers feared coming back to work. They had lost confidence in the safety of the factory, and nothing he said reassured them sufficiently

to return to the location where their colleagues had died or to work at their previous level of productivity. Avram came to a decision. He resigned as CEO and took a job on the line, right at the spot where the explosion had taken place. Slowly, workers began to return and production began to creep upward. The company eventually turned a corner. Ten years later, it had become one of the largest in Israel, much more profitable than it had been before the accident.

The CEO had to acknowledge the loss he was asking the workers to accept, in this case the loss of a sense of personal safety. Because their fears were so deep, verbal acknowledgment would not suffice. He had to model the behavior.

But even symbolic modeling can have substantial impact. When Lee Iacocca reduced his own salary to \$1 during Chrysler's troubles, no one worried that Iacocca would go without dinner. But the fact that he was willing to make a personal economic sacrifice helped motivate employees to do likewise as part of the company's turnaround plan.

ACCEPT CASUALTIES

If people simply cannot adapt, the reality is that they will be left behind. They become casualties. This is virtually inevitable when organizations and communities go through significant change. Some people simply cannot or will not go along. You have to choose between keeping them and making progress.

A few years ago Marty consulted with a company that did technical work for the defense industry. The organization had



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enjoyed a long and successful run, but the fall of the Berlin Wall in 1989 ushered in a new era. The Cold War was over. The new CEO realized that the competition for contracts was getting tougher, that he and his company could no longer rely on their reputation and have the work come to them. He began to think about changing the business, becoming more aggressive and adding to their product line. For many of the long-term and most respected employees, this was hard to accept.

At the CEO's direction, the senior managers went off to a two-day retreat to chart their future direction. At the end of the retreat, the CEO held a climactic meeting. He wanted an endorsement of the new plan, and he asked each of the participants whether they were with the program. One-by-one, they each said yes,

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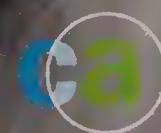
some with great reluctance. The number-three person in the organization sat near the end of the row. He had worked in the organization longer than anyone else present. The room was quiet as everyone waited. He said nothing. Slowly he got up and left the room. He packed his bags, went back and cleaned out his office, and left his letter of resignation on the CEO's desk. He became a casualty, and the willingness of the CEO to accept his resignation demonstrated to the rest of his team his commitment to change.

People seeking to exercise leadership can be thwarted because, in their unwillingness to take casualties, they give people mixed signals. Surely we would all prefer to bring everyone along, and we admirably hold up this ideal. Unfortunately, casualties are often a necessary byproduct of adaptive work. Without the heart to engage in sometimes costly conflict, you can lose the whole organization. **CIO**

Ronald A. Heifetz and Marty Linsky are on the faculty at the John F. Kennedy School of Government at Harvard University. Heifetz is the author of *Leadership Without Easy Answers* and codirector of the school's Center for Public Leadership. Linsky is faculty chairman of many of the school's executive programs, including Senior Officials in State and Local Government, and Leadership for the 21st Century.

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Reaching Back in Time

New tools give legacy apps a better life on the Web

BY JOHN EDWARDS

Edited by Christopher Lindquist. Send your thoughts and ideas for future columns to clindquist@cio.com.

IN THIS TIME of war and terror, the U.S. Air Force is facing challenges that were unimaginable just a few months ago. How, for example, can an aircraft technician, located in distant and hostile Afghanistan, search for, order and track

critical replacement parts for an F-16 fighter? Not very easily if he has to rely on a fax machine or a computer equipped with terminal emulation software and a dedicated line feeding into a central supply system.

Legacy tools...Bioterrorism...Web watching



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Fortunately, back in 1999, the Air Force decided that it needed to begin Web-enabling its standard base supply system (SBSS). The SBSS is a series of inventory, accounting and order management systems that control the flow of supplies from the warehouse to deployment in the field. "Now anybody with a laptop and a browser can access the supply system and access parts status," says Lt. Col. Jon Dittmer, chief of the Air Force's supply systems division at Maxwell Air Force Base in Gunter Annex, Ala.

A growing number of businesses are facing the same problem as the Air Force—getting creaky legacy systems to work in

says Stiffler. "It's undeniable that you can save a lot of money right up front," she notes.

One Size Fits None

The first question a CIO dealing with a legacy system must answer is whether a particular system even needs to be Web enabled. Systems that don't require a lot of user interaction are the least suitable candidates. "If there's a lot of number-crunching data, as in financial services, then it's not really worth Web enabling," says Stiffler.

But when contending with legacy systems that could benefit from Web enabling,

handle payment processing, trade clearing and settlement, and other tasks that are likely to continue to utilize mainframes for some time to come. "It provides a path of getting services out to either our clients or our customers in a quick way without having to reinvent the entire legacy environment," says Jane Landon, vice president and CIO of Newark, N.J.-based Prudential Institutional, an institutional investment unit of Prudential Financial. Landon is using Jacada software to Web enable her assortment of IBM mainframes.

The other way to bring legacy applications and data onto the Web is by reengineering an existing system. With an application such as Relativity Technologies' RescueWare, CIOs and their teams can dig into a legacy system, find its most critical parts and then convert the key processes into Web-enabled components. "Basically, you rebuild the application in a more modern fashion," says McDaniel.

Reengineering is a permanent solution that—when done properly—is designed to last for many years. But CIOs who fret about the approach's time and cost drawbacks often avoid the technique. And such concerns are justified. Reengineering requires organizations to strip away as much as several decades' worth of irrelevant and often undocumented code in order to focus on basic processes. These processes can then be extracted and brought into a Web-based architecture. "It may not be the best choice because business circumstances [often] demand something quicker," says McDaniel.

Screen scrapers and code generators are certainly cheaper alternatives. Stiffler estimates that the cheap and easy approach can shave "one zero, maybe even two," off of an enterprise's six- or seven-figure reengineering costs.

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The first question a CIO dealing with a legacy system must answer is whether a particular system even needs to be Web enabled.

a new Web-based world. With ultratight budgets strangling new systems deployments, scores of software vendors have stepped forward and are offering tools that promise to bring out-of-touch legacy systems into the Web age.

For many CIOs, the software has arrived not a moment too soon, as they look for a cost-effective way to address the growing clamor—from customers, employees and business partners—for Web-based information access. "For many organizations, the goal right now is getting through the night," says Dana Stiffler, a senior analyst at AMR Research, a technology research company based in Boston.

CIOs looking to leverage a legacy system into the Web era face a number of critical challenges, including planning the proper approach, locating software, retraining staff and addressing long-term viability issues. Yet one overriding benefit can make all of those headaches endurable,

CIOs face two basic approaches: low-cost/stop-gap and higher-cost/longer-lasting. Picking the most appropriate path requires a great deal of advance planning. "It's not a one-size-fits-all decision," says Tyler McDaniel, director of application strategies for the Hurwitz Group, a technology research and consulting company in Framingham, Mass.

The quick and easy approach, using simple screen-scraping and code-generating tools, allows organizations to extract proprietary data from their mainframes and translate the information into a new format, such as XML or Java. Using software supplied by vendors such as Attachmate, HostBridge Technology and Jacada, the legacy system is given a new, Web-compatible front end. "It's quicker, less costly and less risky—you're not doing a lot of changing," says McDaniel.

Screen scrapers and code generators are particularly useful for organizations that

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The good news is that CIOs can actually have the best of both worlds. Screen scrapers and code generators are often used as a stop-gap measure while an organization gradually moves ahead on a full legacy reengineering strategy. "I can slowly change my legacy environment over time if I should desire, and it makes good business sense," says Prudential Institutional's Landon.

Off into the Wide Web Yonder

For the Air Force, leveraging the SBSS posed a dilemma. "Our philosophy in Web enabling was to just get it done—and to get it done fast," says Dittmer. Yet there was also a need to develop a solu-

final result will justify all of his staff's hard reengineering work. The finished platform will allow developers to flexibly deploy components across the Air Force's entire system and to tie several different supply management systems into a single environment.

Basic Web enabling was completed in December 2000 on the old Unisys system, but the reengineering work continues. "We're still in the process of converting the user interface to a more graphical orientation," says Dittmer. That work, along with additional front-end error checking and business-rule-logic enhancements, is scheduled for completion later this year. Once that stages is finished, the SBSS is slated to be completely free of the Unisys

While few CIOs doubt the value of bringing Web access to legacy systems, the process is not without its perils.

tion that would last well into the future. After considering the various options, Dittmer and his staff decided to shoot for the sky: They would quickly give the legacy system Web access capabilities and then commit to a complete system reengineering.

The challenge Dittmer and his team faced was to gradually migrate a three-decade-old system that is now hosted on a Unisys 2200 Clearpath mainframe—with data trapped inside a proprietary DMS-100 database—to an open Web-based architecture. Dittmer's staff is using Relativity's RescueWare to extract business rules and generate a Java-based user interface and other Web-friendly components from the original Cobol. "We have a million-and-a-half lines of Cobol code that have been touched by hundreds of different programmers, so when we try to make a change to the system, it's really, really difficult," Dittmer says. But he adds that he believes that the

environment early next year. The 30-month project will cost more than an estimated \$10 million (a figure supplied by Relativity, not Dittmer, who declined to estimate cost).

Avoiding the Pitfalls and Perils

While few CIOs doubt the value of bringing Web access to legacy systems, the process is not without its perils. Project leaders must stumble through a forest of conversion and reengineering products in order to find the tool that most closely meets their needs. "There are probably about 200 companies that let you take the user interface and redo it," says Vivek Wadhwa, Relativity's CEO.

There's also the not-so-small matter of retraining staff in new, Web-oriented software technologies. Veteran developers accustomed to toiling in a Cobol environment, for example, may have a hard time acquiring new skills. New hires, on

Cool Product

Multiple Images

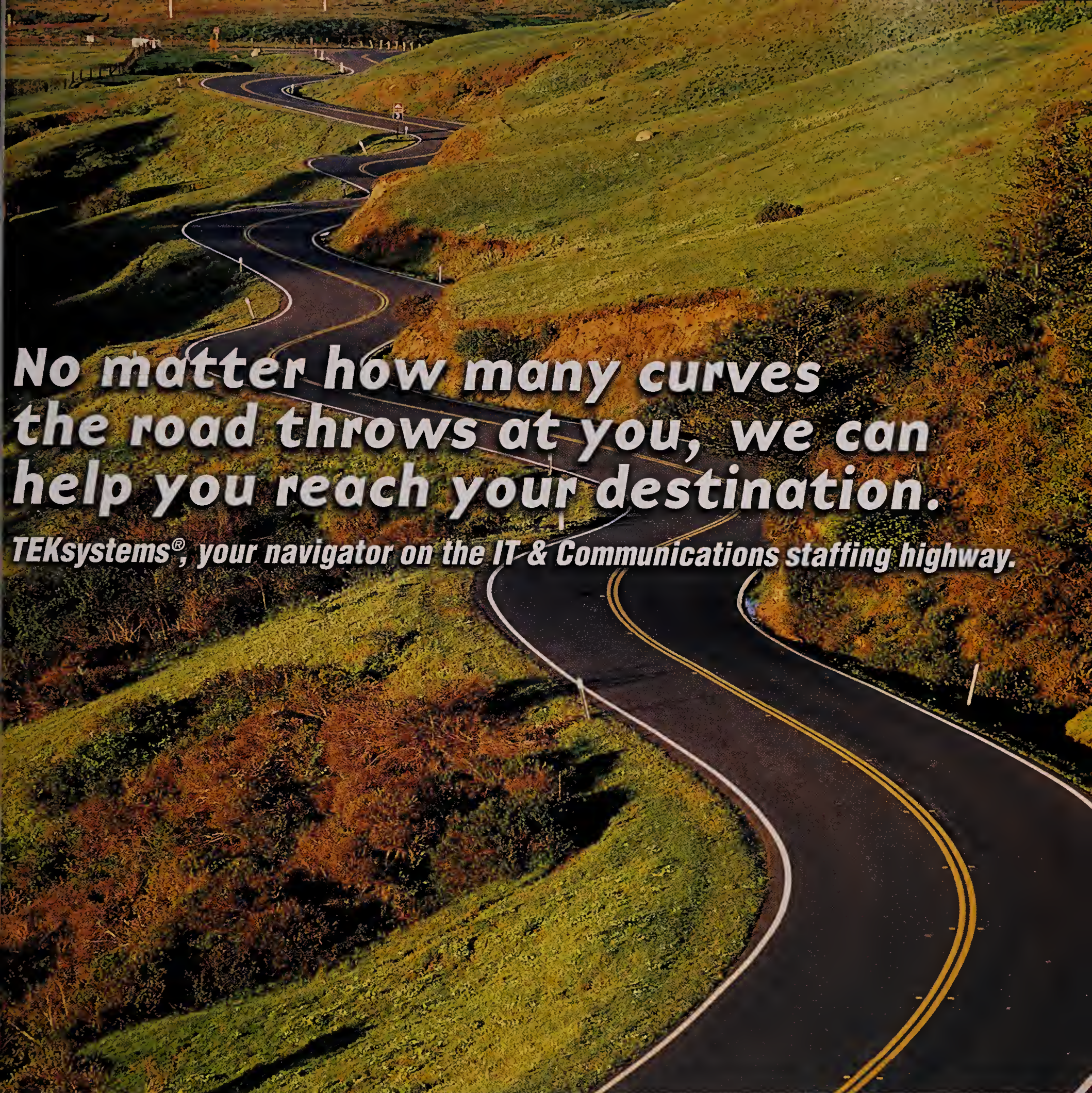
IF YOU'RE feeling cramped and need some more computer screen space, 9X Media (www.9xmedia.com) may have the digital real estate you're looking for.

The company's line of X-Top multiple monitor systems lets you connect up to nine (yes, nine) LCD screens into a single virtual workspace. The product uses a set of linked support arms mounted on a central hub to hold flat-panel displays (15 to 24 inches in diagonal measurement) in position as one viewing unit.

Customers can start small—say a pair of 15-inch screens—and then add more or get bigger as their needs and budget allow. Each screen can be moved individually for optimal, ergonomic positioning. 9X Media can supply screens (both analog and digital) with the system, or customers can provide their own (the arms work with any Vesa-compatible LCD display).

The X-Top systems come with a hub, monitor arms, a sound system and necessary cables. Running the monitors may require customers to buy extra video cards or an additional multimonitor-capable card. Pricing for the X-Top systems starts at around \$1,699 for a version with two 15-inch displays.

—Christopher Lindquist



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the other hand, may have trouble mastering the legacy system's various quirks and vagaries.

Under the best conditions, legacy system leveraging is a complex, time-consuming job. Even screen scrapers and code generators, which are widely hailed for their simplicity, require a fair amount of hands-on work. "It's when you start leveraging the APIs that it goes back to traditional development," says Prudential Institutional's Landon.

Further complicating the CIO's job are questions about how legacy systems will eventually fit into emerging Web services strategies. "It's one of the major missing pieces of the Web services story," says Hurwitz's McDaniel. He says he believes that a Web services interface could make legacy systems more reusable and flexible by allowing applications to communicate with each other. "For example, you can suddenly start rearranging legacy transactions to provide new kinds of functionality for business users," he says. But the basic blueprint for such an environment remains unfinished—at least for the moment. "It's unfortunate that the loudest proponents of Web services haven't really given a lot of thought to what they're going to do with legacy applications," he says. Relativity's Wadhwa says the next release of RescueWare will address Web services integration.

Despite all the obstacles and perils, many CIOs have no alternative but to begin leveraging their legacy resources. "You've got a lot of current costs sunk into those systems," McDaniel notes. "Obviously, you want to continue to extend the value of those systems to a whole new audience of users." AMR's Stiffler agrees. "Given the current hazy economic outlook, it's important for CIOs to have tools that allow them to use their existing infrastructure." ■

John Edwards is a freelance writer based in Gilbert, Ariz. He can be reached at jedwards@john-edwards.com.



UNDER DEVELOPMENT

Health care

Stopping Epidemics Early

THE RECENT BIOTERRORISM scare has served as a wake-up call to our public health system, exposing its inability to track epidemics—from run-of-the-mill influenza to top threats such as smallpox. But even before last year's anthrax cases, doctors and public health officials had been testing Web-based databases and other bio-surveillance technologies that could help monitor medical data to stem an outbreak before it spreads.

At Children's Hospital in Boston, a team of researchers is testing a network that offers real-time surveillance of hospital data, a website that lets clinicians report events or trends suggestive of bioterrorist activity, and decision-support systems to provide appropriate responses to outbreaks. "The benefit of the surveillance network is early detection so we can treat or isolate the problem," explains Dr. Kenneth Mandl, attending physician in pediatric emergency medicine at Children's Hospital and assistant professor of pediatrics at Harvard Medical School. "And the decision-support network will help frontline docs treating victims of diseases that they have never seen before." It will be at least two years before researchers really understand what the output from the pilot system means and how to respond, Mandl says.

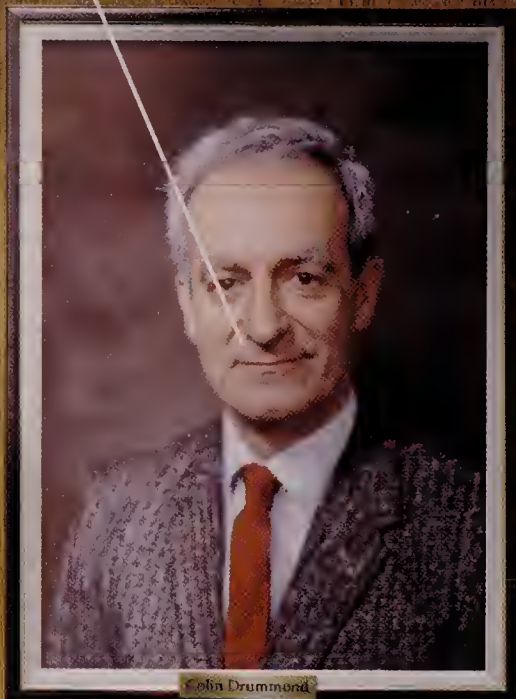
Meanwhile, the U.S. Air Force completed phase one of a \$13.3 million project that created an infectious disease detection database and e-mail alert system. "We're interested in protecting against the use of biologic weapons by terrorists," says Col. Robert Munson, U.S. Air Force division chief of science and technology and assistant surgeon general for expeditionary operations, science and technology. But the system lends itself to more day-to-day uses, he adds, such as stemming hospital-acquired infections.

Some worry that new patient privacy laws under HIPAA could get in the way of information-sharing needed to identify incipient epidemics. Those involved in these efforts say that maintaining security by transmitting and displaying only aggregate data is critical, adding that there may be exceptions to HIPAA when it comes to public health.

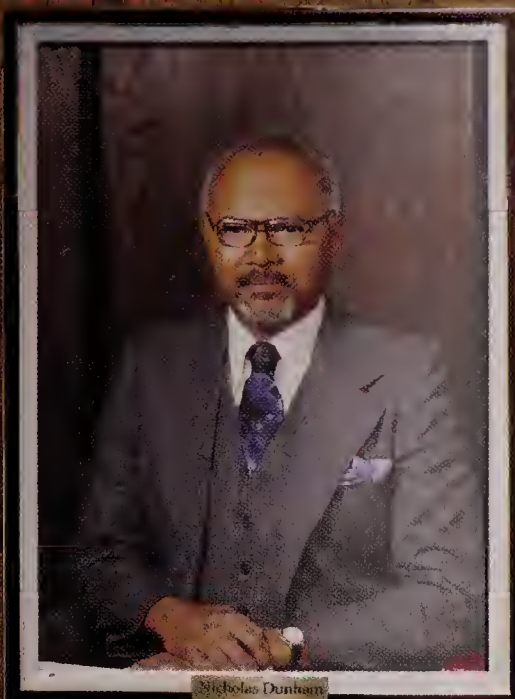
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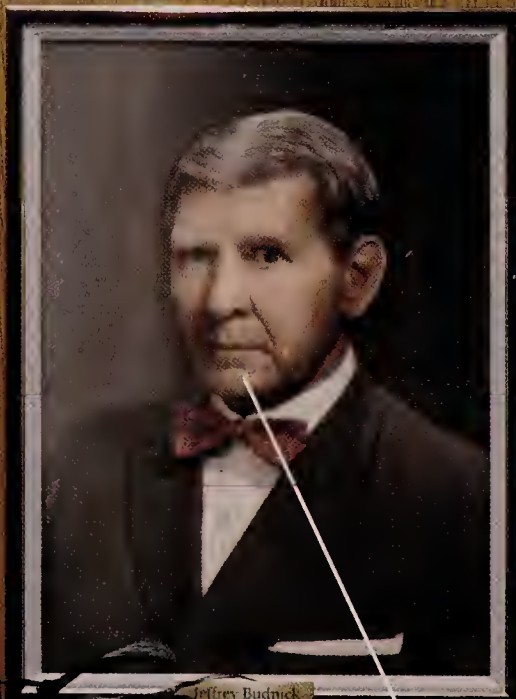
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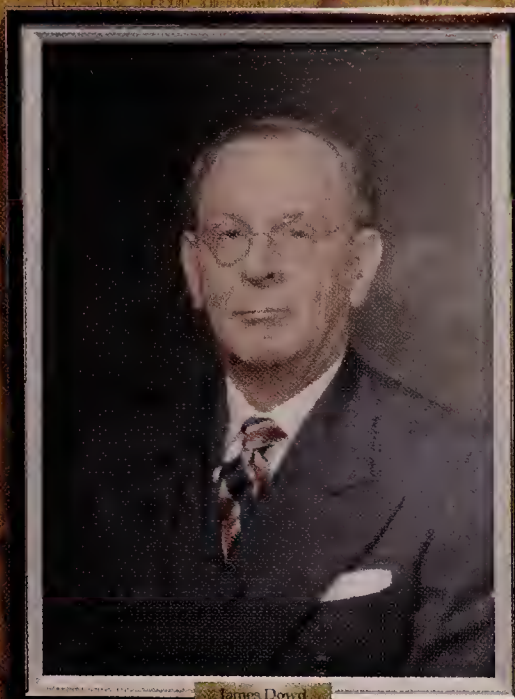
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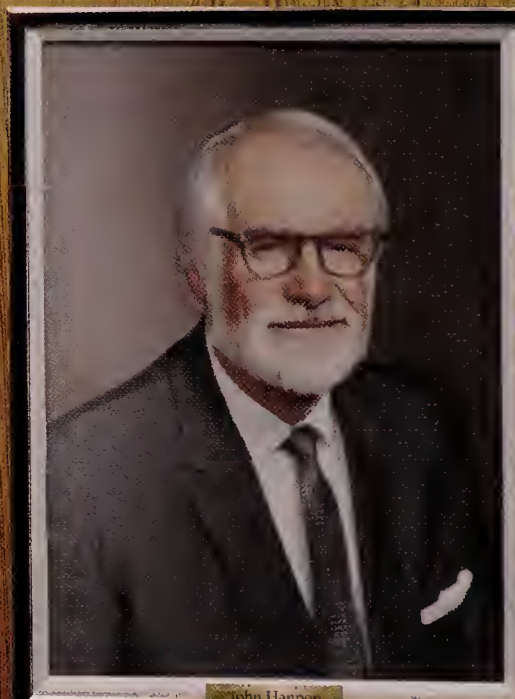
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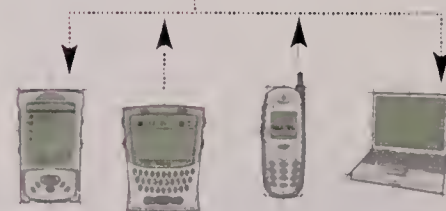


John Hannon

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COMPANIES TO WATCH

TeaLeaf Technology

Be the User

TeaLeaf's tools show you what your Web visitors really experience

BY STEPHANIE OVERBY

A SLOW-MOVING site. "An error occurred while processing your request." A less-than-satisfying search. All sit near the top of Web users' frustration lists—and all are major menaces to companies relying on often undependable but increasingly mission-critical Web-based applications.

Application integrity issues are highly visible to customers, but they can be nearly invisible to IT operations. Incorrect data on a page may go unnoticed to IT because the page appeared in a reasonable time and raised no red flags, says Jasmine Noel, director at Framingham, Mass.-based Hurwitz Group, a technology research and consulting company. And when a problem arrives from a user complaint or a console alert, the IT team may have no way of creating a complete record of what happened.

TeaLeaf Technology, a privately held 1999 spinoff of SAP, has entered the ever-expanding field of system management software for Web-enabled applications to

provide a potential solution to the problem of such unreliability and invisibility. The latest generation of the software, IntegriTea, allows companies to capture, record and play back entire end user Web application sessions. (The product was originally developed as skunk works—under the name "project black box"—at SAP Labs to understand how customers were really using the company's Web-based applications.) IntegriTea captures user session data, encrypts and compresses it, then sends it off to an IntegriTea server. The software also monitors and scans the contents of this data for conditions such as Web server errors, ODBC errors and long response times. If it finds a problem, IntegriTea can then generate alerts for IT staff. In addition, IntegriTea lets users gather application-specific data from the application server to combine with web-page information.

By capturing every user interaction

along with code-level events, IntegriTea provides the IT organization with a more complete picture of the performance of its Web applications. As a result, it can help solve a number of Web application issues—not only detecting content errors and failed processes, but also verifying third-party content and services, recovering lost orders and enhancing security.

"We felt like a lot of stuff was happening on our site that we didn't have visibility to—who's coming, what are they doing, is their experience positive or negative," explains Lisa Scovel, who implemented IntegriTea at TowerRecords.com. "TeaLeaf allowed us to see not only what our customers were doing successfully but also what they were attempting to do that may have been unsuccessful, like searches, incomplete transactions, abandoned registrations." Scovel says TowerRecords.com made massive changes to its registration and checkout process after experiencing firsthand some of the frustration its users encountered. "The tool allows us to isolate the sessions of someone who says they were having a problem on our site at 10:40 p.m. or resolve a dispute if someone says they put a product in their cart at 6:34 p.m. at \$6.99, and the price changed when they checked out."

"It's a good product for anyone who needs to know exactly what happens on a website," says Tim Grieser, systems management research analyst at Framingham, Mass.-based IDC (a sister company to CIO's publisher, CXO Media). Although there could be some privacy concerns when saving entire user experiences, the product addresses that with its encryption process, leaving the onus on the user-company to cover this issue with its stated privacy policy. The only other potential drawback is storage. "The amount of data you wind up saving could be huge, and TeaLeaf has schemes for compressing the data, which alleviates that to some extent," Grieser explains. "But as of yet it hasn't been used for a long period of time by a high-traffic website to see how that will work." ■

watching...

TeaLeaf Technology

Headquarters San Francisco

Founded 1999 as spinoff of SAP AG

Number of employees 36

Product IntegriTea captures, records and plays back user Web sessions

Reason to watch Lets IT departments monitor the real-world performance of Web-based applications

Hurdles Overcoming privacy and security concerns; potential for large processing and storage overhead

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PUNDITS

Optimization

Maximize Everything Now

The latest optimization tools can help you get every dollar out of your operations

BY DAVID L. MARGULIUS

OPTIMIZATION. It sounds so incremental. Boring. For tweekers and PhDs. Is all the fuss really warranted?

Here's the basic idea: During the past few years, you've spent hundreds of millions on core systems (ERP, CRM, SCM and so on) and to populate those systems with data (and you're not done yet, by the way). That data is useful, but it's a mess. And you can't get at it in real-time, correlate it, leverage it, segment it or get it to where it's useful—points of interaction with the customer and points of decision making inside your company.

✍ The basic idea behind optimization is quite simple: Unlock the potential of that data, and apply it to your key business processes to make them more efficient and profitable.

But can it be done? Can optimization really make a difference to your bottom line? Yes, thanks to new and more powerful real-time integration, process and analytics technologies. Whether you're matching supply chain data to customer demand data (to optimize profitability), adding business rules to a workflow process (to optimize efficiency), or leveraging knowledge about customer preferences (to optimize customer satisfaction and revenue), the benefits can be very real. And there are some very real examples.

DHL is using software to customize and optimize pricing for large accounts based on prior customer history (from the CRM system) and business rules reflecting the company's cost structure. Target: To enable its salespeople to write more—and more profitable—business.



MARGULIUS

Unlock the potential of that data, and apply it to your key business processes to make them more efficient.

E-Trade is using intelligent call-routing software to cherry-pick high value customers who call its 800-number (again by dipping into the CRM database) and quickly connect them with an agent whose skills match the customers' likely problem. Target: In financial services, 15 percent of the customers can generate 300 percent of the profits. You do the math.

Canadian Imperial Bank of Commerce is using workflow and business process management software to document and eliminate inefficiencies in the back-office processes of its private-branded banking services division. Target: Additional accounts opened, in a shorter time, while using fewer people.

Sounds good, you say, but what does it take to do optimization well? Here are some quick thoughts, whether you're trying to optimize a customer-facing or internal process.

It takes discipline. As a friend told me recently, you can buy the best pair of running shoes available, but you still have to train. Scrub the data. Build the model. Connect the systems. Write the middleware. Nothing is easy.

It takes focus. Begin with the end in mind. With all that data floating around, you can be tempted in a lot of different directions—don't do it! Get buy-in from the organization in advance on goals, scope and how you will measure the success of the project.

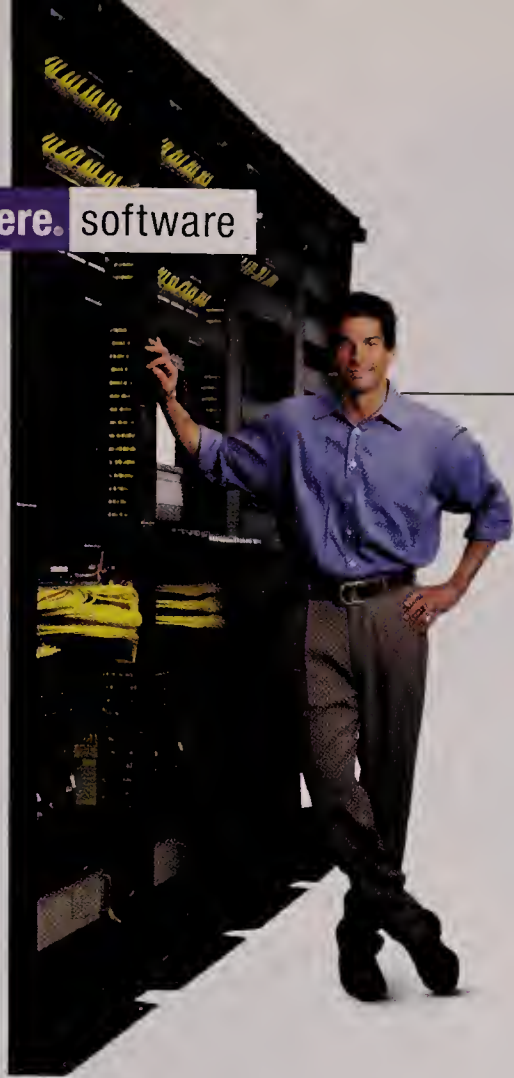
It takes follow-through. If the process you're optimizing involves a productivity benefit, you may have to let people go to get the benefit. You may also have to do some training—people are wedded to their old ways.

It takes a multichannel mind-set. It doesn't pay to optimize silos; if you do, you just won't get the return you could. If you're doing it in the call center, do it in the stores. Do it for self-service. Do it for the field. Do it once, and do it right.

It takes partners that know what they're doing. You can buy generalized process management and business intelligence software, write rules and workflow yourself until the cows come home. Or you can find a vendor with domain expertise and leverage work it's already done. I recommend the latter. **CIO**

David L. Margulius is a San Francisco-based technology and marketing consultant. He can be reached for questions or comments at dmargulius@pacbell.net.

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- 3 That went through **Accounting**
- 4 That commissioned **Sales**
- 5 That notified **Engineering**
- 6 That provisioned the **Circuits**
- 7 That connected the **Service**
- 8 That satisfied the **Customer**
- 9 That concluded the **Process**
- 10 That lives in the **Business Integration Software**
- 11 That we built **Together.**



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Inside

MANAGEMENT BRIEFS

Using bonuses for business alignment

LEADERSHIP AGENDA

By Susan H. Cramm
IT parenting: How to make no sound like yes

READER Q&A

Susan H. Cramm answers questions on IT parenting

Ask her your leadership and management questions at www.cio.com/leadership/agenda.html

How comfortable do you find the hot seat? E-mail Leadership and Management Editor Edward Prewitt at hotseat@cio.com.

Yes, We Had No Integration

Like the cobbler's children who had no shoes, CMGI was an IT company that lacked IT basics. Until CIO Jo Hoppe arrived.

BY EDWARD PREWITT

Before the Nasdaq crash and the Internet bust, before paying millions to plaster your name on a stadium became a mark of corporate folly (see 3Com Field, CMGI Field and Enron Field), CMGI was a star in the high-tech firmament. The Internet holding company's CEO, David Wetherell, was regarded as a new economy guru. And when he hired Jo Hoppe three years ago to be CMGI's first-ever executive vice president and CIO, Wetherell's charge to her was to build an IT structure capable of keeping up with the company's growth.

Today, of course, CMGI is shrinking, not growing, having lost \$5.8 billion in fiscal 2001. But when Hoppe arrived in October 1999, "the company was acquiring two to four companies a month," she recalls. And CMGI's subsidiaries—including online businesses such as AltaVista and UBid and 19 others at the company's high-water mark in late 1999—were also focused on growth. No one had time for process. "There were no mainframes, almost no legacy systems," Hoppe says. "Most of the [subsidiary] companies had no systems at all."

Starting from Scratch

Hoppe's challenge—to lead IT in a decentralized company—is familiar to many CIOs. But at Andover, Mass.-based CMGI, the scale of the undertaking was fearsome. Not only did Hoppe have to build and integrate systems for 21 companies where there were none, she had to do so at "CMGI speed."

"You couldn't say two years for an ERP system. Two years is a lifetime here," Hoppe says. It didn't help that CMGI, as a bag of brands, had no cor-

porate identity. Its subsidiaries had little or no feelings of affiliation among themselves and only grudgingly acknowledged headquarters.

But Hoppe had two factors working for her: the strong support of her boss, the corporate CFO, and the pain felt companywide from the lack of integra-



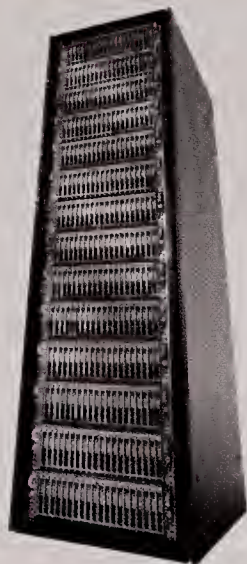
CIO Jo Hoppe had to move at "CMGI speed" to get critical business systems in place before the economy slowed.

tion. "It was a horrendous task each month just trying to close the books without systems. Spreadsheets would be e-mailed in or faxed in," Hoppe says. At a gathering of all the subsidiary heads a few weeks after she was hired, the CFO introduced her and said that centralized systems were the new priority. There would be complete integration, no systems overlap and clear visibility of all corporate and subsidiary data.

Hoppe dove right in, making her first



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Hot Seat

tasks an ERP system for financial and HR information. She quickly selected Oracle software and set a six-month time limit for implementation. The Oracle rep balked, saying that was unrealistic. "Oracle anticipated that with 21 companies we wouldn't be able to get agreement on basic needs of the system for months," Hoppe recalls.

But just six weeks later, after a pair of five-day workshops (one for financial data and one for HR information) at which the 21 companies were represented, Hoppe and all the subsidiaries had agreed on the ERP specifications. "I insisted that all the key players had to be at the table," Hoppe says. "So when we got a few [subsidiary] CFOs who said, 'I'm busy,' I went back to their CEOs and said, 'This is critical. You've got to be represented.'" By the end of each workshop, the heavy lifting was complete, and Hoppe had a total chart of accounts in hand. The ERP implementation was finished within the six-month window.

Hoppe drew two lessons from that success. The first is the necessity of support from the top when it comes to dramatic organizational change. The second lesson is the importance of working closely with business leaders throughout each organization. Hoppe joins in CMGI's monthly executive committee meetings, which are attended both by corporate executives and the heads of all the operating subsidiaries. She also goes on the road once a quarter and visits CMGI's campuses—in Andover, San Francisco and Chicago—meeting with all of the operating company heads. "I ask what their pressure points are and how I can make a difference," she says.

After the Fall

Even as the ERP implementation project was wrapping up in the summer of 2000, the dotcom boom was slowly turning

into the dotcom bust and CMGI's go-go atmosphere began to go-go away. Wetherell stopped acquiring companies and began to consolidate the subsidiaries in search of economies of scale. Hoppe's drive for integration fit into that goal perfectly. Her IT budget in 2001 was \$23 million (1.9 percent of total revenue), which among other things she spent on a Siebel CRM system, corporate website improvements and a corporate portal.

The portal turned out to be a primary integrating tool for the company. "More than anything, it helped establish a CMGI

ways of doing things," she says. But Hoppe found the tabula rasa of CMGI exhilarating.

Still, she acknowledges that her job has been more challenging than fun since the recession took hold. The market pressure on CMGI, which saw its stock drop from a high of \$163.50 per share in January 2000 to a low of 60 cents in October 2001, has been enormous. The company shut down some subsidiaries and divested itself of others—including its biggest investment, the Lycos search engine company—eventually paring down to nine operating companies in mid-2001: the

JO HOPPE'S LEADERSHIP TIPS

How to Keep IT Front and Center

- 1** "You must have support from the top. It takes nothing less than that, particularly when dramatic organizational change is at stake."
- 2** "Really work with operating managers. Share the vision. If you have buy-in and good working relationships, they see where you're coming from."
- 3** "Share as much of your data as possible with your [IT] managers, so they're seeing the same things executives are."

identity," Hoppe says. "All the subsidiaries are entrepreneurial, but now for the first time they had one place to go" for information. Yet the need to create a portal was an irony in itself; CMGI owned three portal companies but had no corporate portal. Like the cobbler's children who had no shoes, CMGI was an IT company that lacked even IT basics.

Now 52 years old, Hoppe gained her credentials in the publishing industry, starting out at Atex Media Solutions before becoming vice president of IS at Houghton Mifflin and then CIO at Addison Wesley Longman. "I came from very established companies with systems in place. Houghton Mifflin was a very classy company, for instance, with mainframes and legacy systems and established

AltaVista search engine, the online auction site UBid.com, fulfillment specialist SalesLink, online marketer YesMail.com, Internet analyst Engage, Internet services providers Tallan and NaviSite, online imaging specialist Equilibrium, and ProvisonSoft (formerly CMGion).

Although CMGI has done well to survive when so many other Internet companies have not, it's not out of the woods yet. Noting that all the company's subsidiaries operate in "embattled markets," Forrester Research Analyst Christine Ferrusi-Ross in Cambridge, Mass., is less than gung ho about the company's future. "Even though things are picking up, most firms' prospects for the year are moderate, and moderate is a best-case scenario for CMGI" in 2002, she says.



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Hot Seat

Beyond the coming year, “development will be much more important than their current cash position.

If their growth strategy is to wait for the recovery and hope rising tides raise all boats, they won’t make it past 2002,” says Ferrusi-Ross.

At first, the economic slowdown made Hoppe’s centralization mandate easier to carry out. The subsidiaries were hungry for the business systems she put in place. The ERP system lowered purchasing costs and improved the accuracy of forecasts. By themselves, though, the new systems couldn’t offset CMGI’s cascading losses. The Internet advertising on which the company depended had disappeared.

Hoppe’s IT budget, originally set at \$28 million for 2002, was slashed to \$17 million—a big hit made even bigger by the presence of high-fixed costs derived from the business systems roll-out. In response, Hoppe has reined in projects, negotiated savings with vendors and laid off more than a third of her IT staff. From a peak of 102 employees, the IS group is now down to 65, and it may not yet have hit bottom.

Some of the layoffs have been due to efficiency gains. For example, Hoppe and other members of an ad hoc committee seeking cost savings tallied 230 file-and-print servers and 65 e-mail servers across CMGI’s operating companies and three campuses. Those servers are being consolidated to 20 and four, respectively, thereby reducing the need for IT staff to maintain them. But that doesn’t make layoffs any easier, Hoppe says. She is sympathetic to the plight of those who have been laid off or might yet be, but CMGI’s hopes for profitability come first.

As the company shed subsidiaries and people, Hoppe came up with an innovative way to save some money. Concerned about IT hardware “sprouting legs,” she

MANAGEMENT BRIEFS

The Best Use of Bonuses

By Edward Prewitt

Will Work for Business Alignment

Cash bonuses for software developers and other IT staff became commonplace during the go-go ’90s. Now, when money at many companies is tight, how can CIOs ensure that money is being disbursed wisely?

Bonuses have an inherent alignment problem, says John Blanco, vice president of Cablevision’s corporate IS strategic communications headquartered in Bethpage, N.Y. “Every IT professional is fighting to look over the fence to see what the business is really doing. It seems that when we reward people, we go back to our own camps.”

In pursuit of IT-business alignment, Cablevision recently reorganized the 600-person IT staff into cross-functional teams. IT employees continue to report to the CIO’s office, but they are stationed within the business units. The details of the bonus plan are still to be determined, but a big part of each IS staffer’s bonus will depend on what the head of his business unit says about IT. “I want my IT people to feel they have an investment in a business objective,” Blanco says. “It goes against the grain, so we use bonuses to help [alignment] along.”

Ralph Rodriguez, CIO and chief security officer of eXcelon, an XML software company based in Burlington, Mass., keeps his troops aligned by doling out bonuses quarterly. “The frequency helps alignment because [bonuses] come up so regularly,” he says. Bonuses are based on company performance and are not guaranteed; sometimes there’s no money to give.

Most quarters, though, Rodriguez is able to sit down with each of his 16 IT staffers for a review of their work. Based on criteria such as effort, quality of work and collaboration with line managers, he hands out cash bonuses that range



from zero to 15 percent of employees’ salaries. “I don’t try to give the money away,” he says. “The company doesn’t get a return from that.”

Suppressing Scope Creep

Ace Hardware uses bonuses to limit scope creep. “Users tend to say [to IS], ‘I don’t have a lot of time. You know what I want,’” says Paul Ingevaldson, senior vice president of international and technology at the Oakbrook, Ill.-based company. That tendency leads to ambiguous targets, ever-expanding projects and missed deadlines.

“We argue back that it’s better to get things done,” Ingevaldson says. IT projects are rigorously defined at the start of the project, and the 300 IS employees are awarded bonuses based on their ability to meet the deadlines.

The bonus plan—which can be “pretty rich,” Ingevaldson says—“makes IT staff into businesspeople instead of a bunch of techies.” The result has been an increase in the number of projects coming in on time, he says, and an awareness throughout the company that the IS group will do what it says it will do.

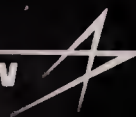


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had all unused equipment gathered on the fourth floor of CMGI's historic headquarters building. She then had her staff set

up an asset tracking system, complete with hardware specs and internal cost, on the corporate portal. In a little over a year's time, Hoppe redeployed 75 percent of the assets, valued at \$4.5 million.

Hoppe's ability to accomplish her business goals received a boost when Wetherell relinquished his CEO title in February. He remained chairman while CFO George McMillan took the reins. McMillan insisted that Hoppe continue to report to him, in effect raising her status. "Having that reporting relationship to the top helps a lot when you get push-back. People are aware of where your directives come from," she says.

"You couldn't say two years for an ERP system. Two years is a lifetime here."

—Jo Hoppe, executive vice president and CIO, CMGI

Relationships with the leaders of the line businesses are no less important for the CIO, Hoppe believes, especially in a company as decentralized as CMGI. "It's in hard times that everyone needs to draw closer and work cooperatively," she says. "You're never going to get everybody happy about the fact that they're going to have to let people go, but when you have good working relationships, they see where you're coming from." **CIO**

Share your thoughts on leading IT in a decentralized organization with Leadership and Management Editor Edward Prewitt. He can be reached at eprewitt@cio.com.

Leadership Agenda BY SUSAN H. CRAMM

IT Parenting

How to make no sound like yes



At a recent conference, a CIO leaned over and confessed to me that he has a "terminal case of saying yes." My response? It's important to say yes—in the right way. The key to CIO success is figuring out how to focus the IT agenda while you gain the reputation of a yea-sayer.

As a rapidly aging parent of a 2-year-old, I will use an analogy near and dear to my heart: CIOs should manage business partner relationships as they would raise children. Your job is to create good IT citizens. Like children, the line managers in the business are self-absorbed—and rightfully so. They don't care a whit about being responsible consumers of IT assets; they know what they want from you and don't believe their personal desires may not serve the company's interests in the long term.

Parents help their children learn how to take care of themselves. CIOs should help their business partners "move out" of the centralized IT provisioning house—where the IS group does everything for them—so that the organization can transition to the fiduciary model of IT management.

In this organizational model, business units are responsible for the "what" of IT, while the IS group is responsible for the "how" (for more detail, see my column "The CIO as Valet," at www.cio.com/printlinks). As you help your business partners move away from dependence on IT and toward organizational interdependence, here are some tips on how to make IT parenting work.

APPEAL TO A HIGHER AUTHORITY. This is akin to parents using religious principles to shift the attention away from themselves. Use the company's business strategy as your guidepost, and facilitate a planning process that identifies and funds the most important IT projects. Get the CFO to establish and enforce tough investment rules. By positioning the CFO as the bad guy, you'll be able to form good-guy relationships with your business counterparts to help them get what they want—while ensuring that they play by the rules.

BE A GOOD ROLE MODEL. Be respectful and easy to work with. Don't assume that you know line executives' business any more than they know yours. Nothing will get a business partner crankier than convoluted approval processes, inadequate basic IT services and your inability to deliver quality software on time and on budget.

GIVE THE BUSINESS MANAGERS TASKS. Set up an approval process that protects your IS organization from heavy involvement until projects have been vetted for strategic value. One CIO has taught his internal customers to hold back project requests until they get the justification right. Another executive has instituted a project discovery phase that focuses on Why and What questions, and postpones any heavy How analysis until after the project has been approved. Improve the odds of project success, and at the same time test business execs' commitment, by requiring that they ante up project resources.

EDUCATE AND HOLD THEM ACCOUNTABLE. Put your employees in client-

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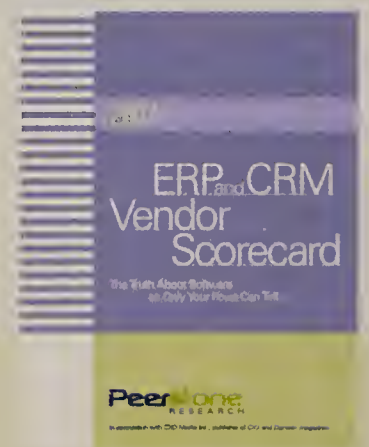
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Hot Seat

facing roles so they can help business partners select the best course of action. Use pilot projects and proto-

types to expose soft spots early. If your business partners decide to do something foolish, ensure that they see the consequences. For example, if they hire their own contractors, insist that they agree, in writing, to do the maintenance and pay for integration. You hope they'll decide against "running away from home"—but if they do leave, they'll be smarter when they return.

CHOOSE YOUR BOUNDARIES AND BATTLES CAREFULLY. Some issues are worth going to the mat. Most are not. Give your business partners the freedom to make some IT decisions by giving them an IT allowance *and* a curfew. Link the granting of this freedom with the responsibility to play by the rules that have been set for value, standards, security, process and economies of scale. On the other hand, if you are trying to prevent a questionable million-dollar investment, it's worth digging in your heels until somebody puts forth the effort required to make the investment pay.

CIOs have a fiduciary responsibility to ensure that value is realized from their company's IT investments. They are able to fulfill that responsibility through the provision of value-added services supported by a set of rules—that is, policies, processes and accountabilities. By defining these rules correctly, you can perfect that highest skill of parenting: making no sound a whole lot more like yes. **CIO**

Susan H. Cramm, former CIO and vice president of IT at Taco Bell and former CFO and executive vice president at Chevys, is president of Valuedance, an executive coaching firm based in San Clemente, Calif.

Reader Q&A

How to Raise Good IT Citizens

Susan H. Cramm answers your questions on "IT Parenting"

Q: Most CIOs try to get consensus, but that works only so well. What are your thoughts on being a consensus person versus a benevolent dictator?

A: In IT parenting, it is your job to set boundaries—to act as a benevolent dictator, if you will—when the interests of the individual (or business unit or function) are not aligned with those of the enterprise. The parameters that CIOs should set include strategy, investment policies and decision-making authority, standards and architecture, security and privacy, business continuity, HR standards, development methodologies and tools, and economies of scale. Dictate on the "how to do IT right" issues and leave the decisions on what the company should invest in and why to your business partners.

Q: Interesting thoughts. And here I was telling my staff that I expected them to act like adults because I already had children at home!

A: Don't change your message. Your staff should assume their role as coparent and not make your life more difficult than it already is by "arguing in front of the children." A classic example is the IT account representative or project manager who does not support the company's architectural directions and standards, and shares his disagreements with the business client.

Q: What cost justification models do you recommend to the business? It

seems most financial models used for capital investment are weak in quantifying soft benefits, such as improved quality, reduced rework or customer satisfaction.

A: Just because soft benefits can't be translated into dollars does not mean that they cannot be quantified in what I call operational measurements. All the benefits you list can be measured. A great business sponsor is someone willing to commit to specific improvements based on his understanding of the processes that transform performance.

Q: Do you have a template for a project discovery phase?

A: The client I referred to prepares a business case for submission to the governance council. The business case reviews the purpose of the project, strategic alignment, financial and operational justifications, risk dimensions, sponsorship, timing and required resources.

Q: How can an IT leader show he has the business moxie to shape this IT parenting relationship successfully?

A: The best way for IT leaders to show that they have business acumen is for them to perform successfully in executive-level roles outside of IT. Short of that, make sure you deliver on your commitments (both on projects and operations), ask great questions, and be someone with whom people enjoy doing business. **CIO**

THE FOURTH ANNUAL

CIO 1000

CIO MAGAZINE'S ANNUAL SYMPOSIUM & AWARDS

Leadership and Innovation for the Future of the Integrated Enterprise



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- Redefine leadership – and the role of IT – in the next business epoch
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SUNDAY, AUGUST 18

8:00 AM – 1:30 PM

Golf Tournament

Tee up with CIO and our Corporate Partners on The Broadmoor's West Course, designed by Robert Trent Jones, and known for its challenging, steeply-angled greens.

3:00 PM – 5:00 PM

Registration

6:00 PM – 7:30 PM

Café 100 Reception

Meet and network with other participants, Award honorees and Symposium Partners in our informal networking environment.

MONDAY, AUGUST 19: TODAY'S CHALLENGES

7:00 AM – 8:00 AM

Registration & Breakfast

8:00 AM – 8:15 AM

Conference Welcome

ABBIE LUNDBERG
Editor in Chief,
CIO Magazine



8:15 AM – 9:00 AM

Future Forewarned

PAUL SAFFO,
Conference Moderator
Director and Roy Amara Fellow,
Institute for the Future
What business and technology developments will have the most impact on CIOs in the year to come? Saffo shares his choices and why he thinks these are the key ones to look out for.



9:00 AM – 9:45 AM

Achieving Global Integration at GM

CHERRI MUSSER
CIO - Supply Chain,
eGM, Onstar Information
Systems & Services



9:45 AM – 10:15 AM

Innovation, Leadership and Integration

CRAIG CONWAY
CEO, PeopleSoft, Inc.



10:15 AM – 10:45 AM

Mid-Morning Break

10:45 AM – 11:30 AM

Supply Chain Lessons Learned from the High-Tech Implosion

BUD MATHAISEL
Corporate Vice President & CIO,
Solectron
Inventory write-offs have been in the billions of dollars. This has been a financial problem for high-tech companies, and a particular embarrassment for those companies with vaunted Internet connections to their suppliers and customers. What went wrong? Was it the systems, processes, people or incentives that failed? Does a risk-based approach towards supply chain management have potential? Mathaisel presents his perspective and a framework for helping to prevent the reoccurrence of this expensive set of mistakes.

11:40 AM – 1:15 PM

Industry Briefings

Our corporate partners present case

studies and sessions on deploying the latest technologies and services.

1:15 PM – 2:45 PM

Working Luncheon: Special Presentation on Security and Privacy

This session is produced in cooperation with the National Critical Infrastructure Assurance Office (CIAO) in the US Department of Commerce.

2:45 PM – 4:00 PM

Privacy, the Law and CIOs

CHRIS HOOFNAGLE
Legislative Counsel,
Electronic Privacy
Information Center
Like it or not, as a CIO you will be highly involved in your organization's electronic privacy policies — and their legal ramifications. We look at current and proposed legislation that will have major impact on CIOs, their corporate officers, customers and employees.



4:00 PM – 5:30 PM

CIO Executive Mindshares

Small working groups explore the leadership challenges and best practices of specific, critical IT/business topics. Members share experiences, lessons learned, mistakes and successes, and new ideas for tackling common problems. *Session participation is limited to CIOs and senior IT executives.*

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& AWARDS CEREMONY



ation ■ Integration

6:00 PM – 7:00 PM

Café 100 Reception

Catch up with our Symposium Partners and other participants in our informal networking lounge. Develop relationships with peers who will serve as sources of information and inspiration.

TUESDAY, AUGUST 20: TOMORROW'S OPPORTUNITIES

7:00 AM – 8:00 AM

Breakfast & Informal Roundtable Discussions

Gather with *CIO* magazine editors and fellow attendees to discuss common problems and possible solutions. Each table has a specific topic; choose one and join in.

8:00 AM – 8:15 AM

Welcome

PAUL SAFFO

8:15 AM – 9:15 AM

The Information Revolution: Why This is Just the End of the Beginning

W. BRIAN ARTHUR
*Citibank Professor,
Santa Fe Institute*



According to history, in the first stage of a technology revolution, a period of speculation is followed by a crash. But we can expect more real innovation to come in the great build-out that follows, this time driven by the interconnection of business and the appearance of Web-based services.

9:15 AM – 10:15 AM

The Future of Technology in Business, Part I

While the pace of innovation and change in the tech sector has slowed dramatically, the real build-out — and the real transformation of business — is yet to come. New developments like the semantic web, virtual reality modeling language (VRML), wireless everywhere, cutting-edge security tools and techniques, and the ability of organizations to store and manage over a petabyte of information will make things possible that only the futurists dreamed about before. This panel of leading technologists explores some of these critical areas.

10:15 AM – 10:45 AM

The Future of Technology in Business, Part II

The morning's speakers gather for an interactive discussion about where these developments will lead today's organizations.

10:45 AM – 11:15 AM

Mid-Morning Break

11:15 AM – 12:55 PM

Industry Briefings

1:00 PM – 2:15 PM

Networking Luncheon

Savor lunch and the beautiful view from the Lakeside Terrace while you extend your peer network.

2:30 PM – 3:30 PM

Leading in the Next Business/IT Epoch

Moderator:

ABBIE LUNDBERG
*Editor in Chief,
CIO Magazine*

Panelists:

ROB CARTER
*CIO & Executive Vice
President, FedEx
Corporation*



JERI DUNN
CIO, Nestlé USA, Inc.
REBECCA RHOADS
CIO, Raytheon Company



IT is more exposed to, and embedded in, the business than ever before. As we emerge from the recession, what will be the next IT epoch, and how will CIOs best lead their organizations into it? This roundtable of CIO 100 Honorees discusses our current state of evolution, where we're heading and the requirements of the IT leadership role, including shifting accountability, governance and organization models, the challenge of ROI, and transformation vs. enablement.

3:30 PM – 4:15 PM

Closing Keynote

MICHAEL SCHRAGE
*Inventor, Columnist and Author of
"Serious Play: How the World's
Best Companies Simulate to
Innovate"*

4:15 PM – 4:30 PM

Closing Comments

PAUL SAFFO & ABBIE LUNDBERG

4:30 PM – 6:30 PM

Free Time/Informal Networking

6:30 PM – 7:00 PM

CIO 100 Awards Reception

Put on the evening wear for our special black tie reception, followed by dinner and the awards ceremony to recognize this year's CIO 100 Award Honorees.

7:00 PM – 9:30 PM

CIO 100 Awards Dinner and Ceremony

9:30 PM – 11:00 PM

Dessert Reception Hosted by CIO 100 Awards Ceremony Underwriter, PeopleSoft, Inc.

Cap off the evening with a special post-awards reception.

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Please make your hotel reservations immediately by calling CIO Conference Housing at 800 514-7639. To receive the discounted rate, please mention you are attending CIO 100 when making your reservations. Be sure to guarantee your room with a credit card, as all unreserved or unguaranteed rooms will be released on July 5, 2002. Hotel reservations, cancellations and charges are your responsibility. If a Symposium Enrollment Form is not received within 48 hours of making your hotel reservation, your room will be released from the CIO 100 room block.

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sions.

COMPANY INDEX

9X Media Inc. 120
Aberdeen Group Inc. 60
Ace Hardware Corp. 132
Aetna Inc. 88
AltaVista Co. 132
AMR Research Inc. 60, 120
Attachmate Corp. 120
BorgWarner Inc. 60
Cablevision Systems Corp. .. 132
Celanese AG 60
Children's Hospital Boston .. 120
Cigna Corp. 88
CMGI Inc. 132
Computer Sciences Corp. 66
DaimlerChrysler 96
Definity Health 88
Deloitte Touche Tohmatsu ... 52
Destiny Health Inc. 88
Discovery Health 88

EDS Corp. 88
eXcelon Corp. 132
Forrester Research Inc. 132
Holcomb, Archer, Heber
& Tyler Commerce Inc. 60
HostBridge Technology 120
Humana Inc. 88
Hurwitz Group 120
IBM Corp. 120
IntelHealth Inc. 88
International Data Corp. 120
ISC2 Inc. 52
Jacada Ltd. 120
John J. Davis & Associates
Inc. 24
J.P. Morgan Chase & Co. 52
KeyCorp 60
Korn/Ferry International 24
Lockheed Martin Corp. 52
Lycos Inc. 132
Medem Inc. 24
Microsoft Corp. 76
Oracle Corp. 88, 132
Outsourcing Institute, The ... 66
Panasonic Industrial Co. 60
PricewaterhouseCoopers 52
Prudential Financial Inc. 120
Relativity Technologies 120
Sapient Corp. 24
Securities Industry Automation
Corp. 24
Sigma-Aldridge 60

Staples Inc. 52
Sun Microsystems Inc. 88
Taylor Nelson Sofres
Intersearch Corp. 24
TeaLeaf Technology Inc. 120
Textron Inc. 88
Tivoli Systems Inc. 48
TowerRecords.com 120
Ubid Inc. 132
UnitedHealth Group Inc. 88
Vignette Corp. 48
Visa USA 52
World Wide Retail
Exchange LLC 52

ADVERTISER INDEX

American Power Conversion .. 95
AppGate 17
Canon 27, 73
Cisco Systems Inc. 74, 75
Cognos Inc. 13
Compaq Computer Corp. 21, 133
Computer Associates
Intl. Inc. C4, 5, 119
Connected Corp. 39
Crystal Decisions 29
CXO Media
Inc. 35, 87, 115, 118, 141
Datacore Software 121
DataMirror Corp. 37
Diversified Software 55
Fujitsu PC Corp. 6

Hewlett-Packard 46
IBM Corp. 2, 43, 131
Infosys 135
Kronos Inc. 93
Lakeview Technology C3
Lockheed Martin 137
Microsoft Corp. 30, 51
Nextel Communications Inc. . 127
Nortel Networks 79
Novell Inc. 117
Oracle Corp. 9
Palm Inc. 22
Peerstone Research 139
Pegasystems Inc. 57
Quantum Corp. 71
Qwest Communications 123
Rockwell FirstPoint Contact .. 59
salesforce.com 25
SAP 40
Spherion 97
Sprint 63, 65
Sterling Commerce 69
Sun Microsystems Inc. 10
Sybase Inc. 45
Symantec Corp. 19
TEKsystems 125
Trend Micro Devices C2
US Postal Service 49
Veritas Software 81
Vignette 14
Xerox Corp. 129

EXECUTIVE

Summaries

June 15, 2002

Cover Story

B2B Partner Security

By Eric Berkman | 52

The security of B2B e-commerce partners—suppliers and customers that trade with companies over the Web or through dedicated connections or exchanges—should not be taken for granted. CIOs who want to maximize transactions with existing partners and recruit new ones (or avoid liability) need to account for the security of those partners. More and more CIOs are suggesting, even imposing, expected security practices that include access controls, encryption, access to response plans, employee background checks, incident notification and audit compliance. Cautious companies are building security requirements into contracts with B2B partners, including clauses that indemnify them from damages caused by the partner's security lapse. While a tough customer like Visa can impose its standards on partner banks and merchants, most companies must coax partners into adopting sometimes costly security practices. J.P. Morgan Treasury Service will pay for a partner's extra server if that's what it takes to achieve a safer system. Others suggest a matching fund, where a company offers to kick in a dollar for every dollar its partner spends complying with the requirements.

"The security of your B2B partner is as important as its creditworthiness."

—PAUL GAFFNEY, CIO, STAPLES

B2B Partner Recruitment

By Meridith Levinson | 60

COMPANIES ARE LEAVING millions of dollars on the table because few have yet to sign up second- and third-tier trading partners for B2B e-commerce. More than 60 percent of suppliers in all industries continue to receive orders via fax or e-mail; only 4.5 percent of all purchasing dollars are transacted through B2B. Companies must actively recruit more partners. Panasonic compares online transaction costs with those of manual methods, letting the money to be made (and saved) do the talking when it tries to sign up its partners' senior executives. Celanese Chemicals wins over frontline end users by showing how B2B will make their job better rather than obsolete. For ongoing online support, Sigma-Aldrich uses software to take control of the partner's browser and guide it through e-commerce processes. Such hand-holding costs money, but the payoff is worth it.

Public Sector Outsourcing Failure

By Tom Field | 66

SAN DIEGO COUNTY'S \$644 million outsourcing pact with a vendor consortium was said to be the first wave of a flood of new public sector outsourcing deals. But today, the San Diego deal is a mess, with the parties embroiled in a bitter dispute over cost, service levels and a late ERP rollout. Elsewhere, across-the-board outsourcing of state and local government hasn't got off the ground—and it probably never will. The scope of the work is a major problem: Municipalities and states are so far behind in IT investment that once projects are under way, vendors find themselves spending more than expected. San Diego's consortium has already exceeded its projected investments by about \$10 million and 300 people. Union resistance and publicity add to the intractability of outsourcing efforts. CIOs who remain committed to outsourcing are trying different tactics, such as breaking out smaller pieces of their processes or outsourcing individual projects.

Interview: Richard Clarke and Howard Schmidt

By Sarah D. Scalet | 76

THE CRITICAL INFRASTRUCTURE PROTECTION BOARD, now part of the Office of Homeland Defense, is overseen by Chairman Richard Clarke and Vice Chairman Howard Schmidt. Part of their mission is to convince the private sector to cooperate with the feds, which they hope to accomplish through volunteerism rather than regulation by making it clear to companies that reporting and preventing information security attacks is in their own best financial interest. They favor a proposed law to allow exemptions to the Freedom of Information Act to encourage publicity-leery companies to report incidents. They point to the president's proposal that 8 percent of the next federal IT budget go toward cyberdefense as an example to CFOs to step up the spending. And they will push federal procurement policies to favor technology products deemed secure.

CRM Transforms Health Insurance

By Scott Berinato | 88

CIOs AT INSURERS are using Web-enabled CRM software that profiles individuals' medical spending needs and then suggests a health plan that best fits those needs. The software also estimates the cost of the plan, which consumers pay for out of an annual savings allowance instead of having the premium deducted from their paychecks. Theoretically, the model will make patients better consumers as they try to get the best care for their dollar. At the same time, it will reduce cost for employers and insurers. Most of the largest health insurers, including Aetna, Cigna and Humana, have either rolled out a version of these customized plans or expect to do so this year. Because this new insurance model relies so heavily on IT (customization engines, Web tools and integration), the CIO is front and center—and has to deal with profound ethical issues. Critics of the new model charge that the plans will shift medical care costs to the sick and the poor.



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